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Of 379 institutions receiving a questionnaire on their paramedical training programs, 369 replied. They supplied data on 465 courses in 56 job categories. Those conducting the courses include hospitals, nursing homes, high schools, colleges, universities, technical schools, community service agencies, the State Department of Public Health, and an industrial plant. For each job category are given (1) a definition, (2) a detailed description of the curriculum, (3) the teaching staff, (4) a list of the places offering the course, (5) the cost of the course, (6) in-training payment, if any, for taking the course, (7) length of time required for the course, and (8) eligibility requirements for the trainee. (HH)

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MASSACHUSETTS

HEALTH MANPOWER TRAINING

AT LESS THAN A BACCALAUREATE LEVEL

INVENTORY
1967

JL 680 .M11

Training Center for Comprehensive Care
170 Morton Street
Jamaica Plain, Mass. 02130

PART ONE

INVENTORY 1967

MASSACHUSETTS HEALTH MANPOWER TRAINING

AT LESS THAN A BACCALAUREATE LEVEL

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for that category in Massachusetts, and listing
the course content for a sample curriculum.

I N T R O D U C T I O N

Sponsorship of the Survey

A survey of health manpower training in Massachusetts at less than a baccalaureate level was conducted by the Training Center for Comprehensive Care with the cooperation of the Massachusetts Department of Public Health, the Massachusetts Regional Community Colleges, the Medical Foundation, the Massachusetts Public Health Association, the Manpower Section of Action for Boston Community Development, and supported by funds from the Office of Economic Opportunity.

The returns from the questionnaires have been summarized in the section "The Situation" which follows. The complete report with detailed analysis, over sixty pages of tables and text, is in mimeographed form and can be consulted or borrowed from the Training Center for Comprehensive Care, 170 Morton St., Jamaica Plain, Mass. 02130. (522-0824 or 522-7810).

The report was prepared by the survey team under the direction of Suzanne Greenberg, director of the Training Center. Survey team: Nadia Williams, coordinator; Faith Guss, research assistant; Katherine Libby and Patricia Nelson, assistants.

Definition of Training

Training, in this survey, was defined as instruction given to more than one at a time and repeated more than once, even if loosely structured. Thus are included many inservice training situations. Professional nurse and associate degree nurse training were not included in the coded survey since data is already available in this area, but institutions offering training are listed in the inventory, marked with two asterisks.

A number of training courses were submitted after the summary coding was underway. These additions, mostly nurse aide courses, have been added to the inventory with asterisks, but are not included in the 391 courses analyzed.

Exceptions to the term "less than baccalaureate level have been made in two cases, those which included both termination and some post college training: casework aides and one advanced course for cytotechnologists.

Method Used in Conducting the Survey

A three-page questionnaire was mailed to 379 institutions in Massachusetts in April and May of 1967. These institutions included all the hospitals, including mental hospitals and special disease institutions; selected colleges and universities; the public regional community colleges; many private two-year colleges; the public vocational technical institutes; selected private post high school technical institutes; the boards of public welfare of eighteen of the largest cities (those with Title V grants); the Office of Economic Opportunity community action programs (CAPs); the local and regional mental health associations; other selected community service agencies including visiting nurse and homemaker associations, settlement houses, opportunity councils; and a few industrial firms. As a secondary check, the directors of schools of nursing and nursing homes with over fifty beds were added.

Telephone follow-up was conducted during the summer of 1967 as well as personal interviews in each job field to make sure all known training sources had been approached.

A preliminary report listing 393 training courses was issued in October 1967 and sent to all respondents. The following inventory is based on the preliminary report with the deletion of the thirty medical technologist courses*, and subsequent additions. As a result, the inventory now has 465 courses and includes nine more job categories than the preliminary report.

The descriptive text of each job category, preceding the listing of the institutions in the inventory, comes from information supplied by the questionnaires and from personal interviews with respondents.

The detailed replies to the survey's thirty-eight questions were coded for IBM tabulation, analyzed, and forty statistical tables with accompanying text prepared. "The Situation" on the next page is a condensation of these findings.

Ninety-seven percent of those queried sent in replies (369 of the 379). Of these, 263 reported they had training and 106 reported "no training". However, the latter were in most instances affiliating hospitals.

From 10 - 32% of the replies to each question were not complete. Therefore all references to numbers should be viewed as minimum totals.

* These terminated in baccalaureate degrees.

THE SITUATION

Three hundred and ninety-one[1] courses at less than the baccalaureate level are being conducted in Massachusetts in 263 institutions. The courses give training for 55[2] types of jobs and train an estimated 6900[3] persons each year to work in hospitals, nursing homes, mental insitutions, community health situations, doctor and dentist offices.

Over half the courses are given in 224 hospitals and nursing homes, another quarter in 98 educational institutions, and most of the others by 66 community service agencies and boards. A handful are given by the Commonwealth Department of Public Health, and by an industrial firm. Since almost half the courses affiliate with other institutions, primarily hospitals, the scope of participation in less than baccalaureate training reaches almost every hospital in the state.

The 55 categories of job training are listed as an index on page 7 together with the number of courses conducted for each. A table on the facing page lists the number of courses each type of institution offers.

Who Does the Training

Hospitals and nursing homes train exclusively: directors of volunteers, EEG and EKG technicians, executive housekeepers, hematology and histology technicians, housekeeping aides and porters, inhalation therapist supplemental course, laundry supervisors, matrons, nurse anesthetists, occupational therapy assistants, orthoptists, training coordinators, urology assistants. They also give from 96 - 75% of the courses which train for: X-ray technician, cytotechnologist, nurse aide, licensed practical nurse supplemental courses, mental health aide, surgical technician, dietary assistant, and medical record technician.

Educational institutions, on the other hand exclusively train: ambulance emergency technicians biomedical electronic technicians, dental hygienists, dental laboratory assistants, dispensing opticians, embalmers, food supervisors, medical secretaries, medical assistants, nursing home administrators; and give 91% of the courses for dental assistants.

Community service agencies train exclusively: area representative, community service health worker, health aide, information clerk, neighborhood aide, public health assistant; and conduct 90% of the courses for the homemaker-home health aide group.

Location

There is a wide distribution of less than baccalaureate courses throughout Massachusetts. Almost half of them are given in the Boston or Greater Boston area, where the state population is concentrated; the other half of the courses are almost evenly distributed among the western, central, northeastern and southeastern Massachusetts areas.

In terms of numbers trained each year, the same distribution pattern applies, with one exception. Over half of the 5054 reported trained each year[3] attended classes in Boston or Greater Boston, and

about ten percent of the total in each of the three areas, west, northeast and southwest, from 400-500 in each. The central area is the exception. Here twenty percent of the total are trained, a preponderance due to the twenty-five institutions in the Worcester area, but mostly to the David Hale Fanning Trade High School in Worcester which trains 379 of the 929 central area students.

Growth [4]

An upsurge in growth of the less than baccalaureate programs took place in the last three years, 1965-1967, when the number of courses almost doubled. This appears to be due to small increases in a wide variety of job categories, not to any one category. The three main categories, licensed practical nurse, X-ray technician and nurse aide (which constitute 41% of the courses) were already well established by 1965. The nurse aide courses, which started in the 1940s and 1950s, however, received their greatest growth in the last three years.

Funding

During this three-year upsurge period the programs funded by the Office of Economic Opportunity were initiated and MDTA programs were underway. The OEO courses accounted for 20% of the increase and the MDTA (Manpower Development Training Administration) for an additional 7%.

Federal funding was in the picture well before this. There are twenty-three federal hospitals in Massachusetts which conduct courses listed within this study; and grants from NIH, NIMH, the Department of Labor and Office of Education, and other federal sources, are included in the funding.

Thirty-four percent of all the courses have federal funds. Of these 132 federally funded courses reported, 35 are programs which also have other sources of funds, the combinations being: federal and state, federal and local, federal and private, or federal, state, and local. Ninety-seven of the 132 courses are completely federally funded, either in the federal hospitals or by special appropriations or grants.

Thirty-seven job categories are represented among courses federally funded. Ten categories constitute 62% of the courses (nurse aide, LPN, mental health aide, RN refresher courses, case-work aide, neighborhood aide, cytotechnologist, and three types of homemaker-home health aide jobs).

Seventy-six percent of the federally funded courses train for hospital and nursing home jobs, another 20% for community health situations, and the remaining 4% for doctor and dentist offices and clinics. This compares with the employment goal of the non-federal less than baccalaureate level courses, whatever the funding: 78% train for hospitals and nursing homes, 11% for community services, and 11% for doctor's and dentist's offices.

Admission Requirements

Admission requirements for the less than baccalaureate courses fall into two groups: (1) courses requiring a high school diploma and specific types of high school courses - 59% of the courses: (2) courses requiring qualification other than a high school diploma - 44% of the courses.

In the first group, while all require a high school diploma, some specify in addition science

and math courses or equivalent experience; others specify level of achievement as well as the diploma. Many of the supplementary courses require technical or professional certification as admission, and some courses require two years college with certain prescribed courses as a requisite.

In the second group, candidates are selected after personal interview, physical examination, and some aptitude testing. In many instances the training is for persons of low income; for other courses educational requirements vary with age; some specify definite age brackets in usually a wide age span; a few require tenth grade education, a few eighth grade. All require literacy and an ability to follow written instructions.

Costs

The survey gives a hazy picture of the costs to the applicant. Those that did reply to the two questions (89% answering on tuition, and 79% about stipends) stated that one quarter of their courses required tuition and three quarters carried no charge.

Stipends were granted to students while in training in 42% (114) of the courses and 58% offered no stipends. The stipends for these 114 courses ranged from $40 - $300 a month for three quarters of the courses, most of them over $100 a month.

Of the 82 courses reporting tuition charges, 17% charge under $100, 22% charge $100 - $500; 39% charge $500 - $1000, and 22% charge over $1000.

Length of Training

Half the courses are conducted in less than one year, ranging from one week to a year. These include a great many institutions training for their own staffs.

Of the remaining, almost a quarter are one to two years (half of these are the LPN courses); and another quarter are from two to three years (principally the X-ray technician courses and courses given in the junior colleges). Only a handful of institutions have courses over three years.

Faculty

The size of the teaching staff falls into a bracket of from "one to three" full time instructors and from "one to nine" part time instructors only. A total of 1635 instructors were reported teaching in 275 courses, with only slightly more part time instructors than full time instructors.

The level of education for each instructor, whether full or part time, was reported as follows: 28% have MDs or PhDs; 24% have diploma or professional certification; 23% have college degrees; 16% have master's degrees. The remainder have as their highest level: 5% postgraduate college credits, 4% high school diploma, 1% technical experience only. While the greatest number of instructors are doctors, there are 175 courses with no doctors on the staffs.

NOTES

1 Since the survey data was compiled an additional 25 courses were reported. If these as well as the 49 professional nurse courses are added, there are 465 "less than baccalaureate level" courses in Massachusetts.

2 To the 55 categories in the survey should be added professional nurse training, making a total of 56 categories at less than a baccalaureate level. See page 7 listing.

3 The survey of 391 courses reported 5054 persons trained annually. Since 37% of the respondents did not report how many they trained, the figure has been adjusted upward by this percentage to arrive at the 6900 estimate. Those trained in courses which terminated in earlier years have not been included in this estimate.

4 The statistics on growth of the less than baccalaureate level programs are an analysis of the year the existing programs started and do not take into account the programs which existed and terminated before 1967.

TYPE OF INSTITUTIONS CONDUCTING COURSES

	Number Courses		Number Trained	
Hospitals & Nursing Homes		224		2800
Mental hospitals	18			
Other hospitals	180			
Nursing homes	26			
Educational Institutions		98		1577
Postgrad. high schools and technical institutes	67		1135	
2-yr colleges	18		97	
Colleges & universities	11		336	
High schools	1			
Community service agencies		66		670
Local bds of welfare & hlth	15		104	
Visiting nurse assns.	5		65	
Mental health assns.	5		(n.a)	
CAP programs	9		103	
All other agencies, clinics	32		398	
Mass. Dept. of Public Health		2		3
Industrial plant		1		4
		391		5054[3]

INDEX OF JOB CATEGORIES

Category for which training courses are conducted at less than a baccalaureate level	Number of courses
Ambulance emergency technician	1
Area representative	1
Biomedical electronic technician	1
Casework aide	9
Community service health worker	3
Cytotechnologist	7
Day care aide	3
Dental assistant	11
Dental hygienist	2
Dental laboratory technician	2
Dietary assistant	4
Director of volunteers	1
Electrocardiographic (EKG) technician	1
Electroencephalogic (EEG) technician	3
Embalmer	2
Executive housekeeper	1
Food service worker	9
Food supervisor	4
Hematology technician	1
Histology technician	1
Health aide	1
Homemaker	10
Homemaker-Home health aide	12
Home health aide	8
Housekeeping aide	2
Information clerk (switchbd, admitting)	1
Inhalation therapist	5
Laundry superintendent	1
Licensed practical nurse (LPN)	37
LPN supplementary courses	5
Matron	1
Medical assistant	5
Medical laboratory assistant	11
Medical photographer	2
Medical record technician	4
Medical secretary	12
Mental health aide	16
Neighborhood aide	9
Nurse aide, orderly, or attendant	67
Nurse aide supplemental courses	3
Nurse anesthetist	10
Nursing home administrator	1
Nursing home activity director	1
Occupational therapy assistant	1
Optician, dispensing	1
Orthoptist	1
Physical therapy assistant	4
Professional nurse (RN)	(50)
Professional nurse supplemental courses	16
Public health assistant	1
Radiologic health technician	2
Surgical technician	12
Training Coordinator	1
Urological assistant	1
Ward Clerk & Unit Coordinator	3
X-ray technician	58
	391

INVENTORY 1967

HEALTH MANPOWER TRAINING IN MASSACHUSETTS AT "LESS THAN A BACCALAUREATE LEVEL"

AMBULANCE TECHNICIAN (MEDICAL EMERGENCY TECHNICIAN)

An ambulance emergency technician is trained to serve in emergency situations as well as to drive the ambulance. He must meet the standards for certification of the National Ambulance Training Institute.

The Evening Adult Trade High School in Springfield gives a course for ambulance drivers. It started in January 1968 and is funded by the Massachusetts Department of Vocational Education.

The course is conducted over a twenty-week period with one two-hour session each week for a total of fifty hours. It consists of classroom training with eight hours devoted to driver education and the balance to medical education. The curriculum is designed by the National Ambulance Training Institute and to qualify for the course the trainee must be an ambulance driver. The teaching staff includes a full-time coordinator and several guest lecturers.

Institution Offering the Training	Funding/Stipend	Length of Course	Eligibility
Evening Adult Trade School 1300 State St., Springfield, 01109	Local Funding	20 wks (50 hrs.)	Employed ambulance driver

AREA REPRESENTATIVE

The duties of an area representative are to assist, investigate and implement programs sponsored by the Community Action Program agencies. An area representative helps with the agency public relations by speaking to public gatherings about the work of the Office of Economic Opportunity and the CAP programs. Each area representative has the responsibility for two or three towns under the South Middlesex Opportunity Council jurisdiction. The training course is unique because most CAP programs are local, not regional, and therefore , do not require a representation on this scale.

Training is given by the Community Action Program of the South Middlesex Opportunity Council, Inc. in Framingham in a program instituted in September 1966. Six area representatives have been trained to date. While on the job they receive in-service training for one hour each week.

There is no tuition charge for the course and, in addition, the representative is employed during training. The curriculum is designed by the deputy director of the council and the instructors are part-time employees who hold master's degrees.

Institution Offering the Training	Funding/Stipend	Length of Course	Eligibility
South Middlesex Opportunity Council, Inc. 57 Cochituate Rd., Framingham, 01701	Council Salary	On-going 1 hr. wk.	Employee of agency

BIOMEDICAL ELECTRONIC TECHNICIAN

A biomedical electronic technician operates, services and repairs electronic equipment used in the diagnosis and treatment of patients. This work may be performed in a biological, chemical, physiological, or pharmaceutical research laboratory, in clinics and hospitals, and in industrial organizations concerned with the design, development, and production of equipment.

Biological electronic technicians have been trained at Lincoln College at Northeastern University in Boston since 1965. The four-year evening school curriculum is designed by the dean of Lincoln College and the classes average from fifteen to twenty students a year.

A high school diploma or its equivalency certificate, and demonstrated ability to carry on the course work successfully, is required. There is a tuition charge of $17 per quarter credit. Students attend one or two evenings each week and carry four quarter hours per night in each quarter semester for four to six years. The course leads to an associate degree in engineering. However, the student may terminate with less than an associate degree if he choses to become employed without it.

First year courses are in engineering graphics, algebra, trigonometry, introduction to calculus, and physics. In the second year, the student studies circuit theory, principles of computer programming, and more advanced calculus and physics. Third year courses are in advanced circuit theory, electrical measurements and electronic laboratory, electronics, and general chemistry. Fourth year courses are bioelectronic devices, bioelectronic laboratory, physical chemistry, anatomy and physiology.

Institution Offering the Training	Funding/Stipend	Length of Course	Eligibility
Northeastern University (Lincoln College) 360 Huntington Ave., Boston, 02115	University Tuition	4 yrs. evenings	H.S. or equivalent

CASEWORK AIDE

The social work case aide assists the professionally trained social caseworker in supportive casework which may include the following functions depending on the exhibited skills of the person and the type of agency: (a) interviewing parents whose children are referred to the social agency for psychological help; (b) visiting older people in the community who need friends; (c) establishing a one-to-one relationship with patients in a general or mental hospital, and taking responsibility for socializing and motivating in-patient care.

Eight of the ten case work aide courses listed below are in the Greater Boston area, the other two are in Leominster and Worcester. (One course marked with an asterisk is planned and not included in the statistical summary).

CASEWORK AIDE cont.

The courses vary in length from five sessions of two hours each to two years on-going instruction while on the job. All the training relies heavily on supervision on the job and on-going instruction in discussions or seminars since most the institutions are training for their own use. Three courses report definite classroom-clinical training at the start: two of them, Massachusetts General Hospital and the mental health association courses, are half classroom and half clinical; the other, Boston College's special course, is ninety percent classroom.

As requirement for entrance to the courses, six state: low income, previous participation in volunteer work, previous neighborhood aide training, stability, sensitivity, responsibility, and a desire to help in the community. Two others require a high school diploma and one of them also wants some college. Two courses require a bachelor's degree.

One course requiring a college background gives as curriculum: classroom session each morning for five weeks on the following topics: the helping method and basic concepts of human growth and development (discussed three times each week), long term care of the chronically ill, the history and function of social work in a hospital, the impact of hospital treatment, communication problems for the patient, the organization of community resources, factors influencing the selection of a nursing home or a chronic hospital, the alcoholic and how to help him, the imminence of death. The clinical experience includes visits to medical social service rounds, rehabilitation rounds and a visit to a nursing home.

The curriculum in all courses is designed by the staffs of the institutions with the guidance of a social worker.

Only one institution reports a tuition charge (the program in planning). Salaries or stipends vary from $5 per week for a three week terminal course to $5200 - $6000 per year for an OEO on-the-job training course. Most salaries range from $50 to $80 each week. Five of the programs were founded by OEO.

Institution Offering the Training	Funding/Stipend	Length of Course	Eligibility
Boston College, Mun. Training Institute Chestnut Hill	Fed. OEO Stipend	3 wks.	Volunteers, some later take pd job
Central Middlesex & Mystic Valley Mental Health Association 186 Bedford St., Lexington	Association Salary *Fed (pending) Tuition	1 yr.($\frac{1}{2}$ day per wk.) 9 mos (6 hrs. a day)	Personal qualifications, sensitivity etc. H.S. and some college
Fanning Trade High School 24 Chatham St., Worcester, 01908 Aff: Worcester State Hospital Board of Public Welfare, Family Service & Visiting Nurse Assn.	Fed-State Volunteer	5 sessions (2 hrs. each)	Personal interview Volunteer visitor

continued on next page

CASEWORK AIDE cont.

Institution Offering the Training	Funding/Stipend	Length of Course	Eligibility
Family Service Assn. of Greater Boston 34½ Beacon St., Boston	Association Salary	2 yrs. on-going	College degree or equivalent
Montachusett Opportunity Council, Inc. 305 Whitney St., Box 361, Leominster, 01453 Aff: Springfield College	Fed. OEO Stipend	1 wk. plus on-going	Low income, spec. pers. traits.
Massachusetts General Hospital Fruit St., Boston, 02114	Hospital Stipend	5 wks. + on-going wkly seminars	College degree
Quincy Community Action Organization, Inc. 77 Parkingway, Quincy, 07169 Aff: Quincy Mental Health Assn.	Fed. OEO Stipend	2 wks. (2 hrs. a wk.)	Experienced neighborhood aide
Roxbury Multi-service Center 317 Blue Hill Ave., Roxbury	Center & OEO Salary	3 mos on-job seminars	H.S. grad, some college. Over 20.
South End Neighborhood Action Prog. (SNAP)	Fed. OEO -	1½ hrs. a wk. + monthly sess.	Mostly college but not a requirement

COMMUNITY HEALTH SERVICE WORKER

The community health service worker serves as a liaison between the neighborhood clinic and the individuals in the community. He helps the residents use the clinic more effectively and helps the clinic understand the needs of the residents. He may also familiarize the community with particular aspects of the agency's health education programs and work with families to find solutions to problems, showing them how to obtain services from available agencies in the community. The community health service worker combines the duties of neighborhood, casework, and psychiatric aide.

The Department of Community Health Action at Columbia Point Health Center, Boston (a program in conjunction with Tufts University Department of Preventive Medicine) began a training program in 1967 for family health workers and ten persons have been trained. It was a twelve-week course, half classroom instruction, one quarter clinical experience, and the remaining quarter (3 weeks) supervised on-the-job training. Stipends at Columbia Point are $1.50 an hour and a certificate is awarded upon completion of the course.

Self Help, Inc. of Brockton has a three to twelve month in-service training program which trains community health service workers for the South Shore Community Action Council, Inc. (a CAP agency) and other agencies.

Eligibility requirements are not specific in regard to age or education, but the trainees must be low income persons who show a sincere interest in the

community and a desire to improve it.

Both programs are funded by the Office of Economic Opportunity. The curriculum at Columbia Point is designed by their Department of Community Health Action with an advisory committee. Their instruction staff is two full-time and three part-time persons whose degrees range from a high school diploma to a post-doctoral degree.

Institution Offering the Training	Funding/Stipend	Length of Course	Eligibility
Columbia Point Health Center (Tufts Univ. Med. Sch. Dept. Preventive Medicine), 320 Mt. Vernon St., Dorchester	Fed. OEO Stipend	12 wks. incl. 3 wks. on-the-job	Low income area; pers. interview
Self Help, Inc. 6 Allendale Ave., Brockton (Trains community health service workers for South Shore Community Action Council, Inc., P.O. Box 267, South Duxbury, 02374)	Fed. OEO Stipend	3-12 mos.	Low income

CYTOTECHNOLOGIST

The cytotechnologist works under a pathologist or physician specialist to learn the laboratory techniques of detecting body cell changes. He screens slides of cell samplings, tracing clues to disease in the patterns of cytoplasms and nuclei, and he prepares and screens cytologic smears for cancer diagnosis. This work is performed in hospitals, medical centers and research institutions.

The first school in Massachusetts to be recognized by the American Medical Association Council on Medical Education is the Boston School of Cytotechnology with headquarters at Peter Bent Brigham Hospital. Twelve students participated in the first annual class in June 1967. The program is directed by physicians from each of the five other participating hospitals: Beth Israel, Boston City, Boston Hospital for Women, New England Deaconess, and Massachusetts General.

Two years of college and at least twelve hours in biology are required for admission to the six-month course. Upon completion of the course, the trainee is eligible to take the registry examination in cytology (American Society of Clinical Pathologists) and receives a diploma from the school. The graduate may continue at Northeastern University for a BS degree at its Lincoln College evening division for four more years (part of a seven year evening course).

Students are placed in the cytology laboratory of

CYTOTECHNOLOGIST cont.

one of the six participating hospitals, providing a base where he spends most of his time. In the final three months, the students are rotated through the cytology laboratories of the other hospitals. One to three times a week a formal lecture by one of the pathologists is given in a central location, and once a week there is a seminar held in rotation at the various hospitals where slides, follow-up material and pertinent topics are discussed.

The formal lecture periods include an orientation movie on cell structure, cell divisions, vocabulary, tissues and organs, staining concepts, followed by seminars, general reviews and lectures on over forty-five different topics; i.e.: pathology and cytology of inflammation of squamous carcinoma, dysplasis and carcinoma-in-situ, radiation, female genital tract carcinomas, GI tract including pernicious anemia, gastric ulcers, urinary tract, breast secretions, cerebro-spinal fluid, the mouth, pulmonary function and the bone; the anatomy and physiology of these areas and the cytology of pregnancy; sex chromatin; electron and phase microscopy; tissue culture; sputum collection technic; urine preparation; histochemical and research technics).

The curriculum is designed by a committee of co-directors of the school. Tuition is free and stipends of $225 are given. The faculty is composed of six full-time and eight part-time doctors and technologists.

Institution Offering the Training	Funding/Stipend	Length of Course	Eligibility
Beth Israel Hospital (Boston Sch. of Cytotechnology) 330 Brookline Ave., Boston 02215	Hospital Stipend	6 mos.	2 yrs. college
Massachusetts General Hospital, (Boston Sch. Cytotechnology) Fruit St., Boston, 02114	USPH Stipend	6 mos.	2 yrs. college
Peter Bent Brigham Hospital (Boston Sch. Cytotechnology) Huntington Ave., Boston, 02115	USPH Stipend	6 mos.	2 yrs. college
Boston City Hospital (Boston Sch. Cytotechnology) 818 Harrison Ave., Boston, 02118	Unspecified	6 mos.	2 yrs. college
Boston Hospital for Women (Boston Sch. Cytotechnology) 221 Longwood Ave., Boston, 02115	Unspecified	6 mos.	2 yrs. college
New England Deaconess (Boston Sch. Cytotechnology) 185 Pilgrim Rd., Boston, 02215	Unspecified	6 mos.	2 yrs. college
Northeastern University (Lincoln College) 360 Huntington Ave., Boston, 02115	University Tuition	7 yrs. evening leading to BS	Student of Boston Sch. of Cytotechnology.

DAY CARE AIDE (CHILD CARE TECHNICIAN)

Day care aides work in day care centers, nursery schools, kindergartens or hospitals. They are trained in the care of well infants and/or pre-school children. Their jobs may combine the functions of a nutrition aide, teacher aide, case aide, and health aide depending on the extent of the individual's training.

In Springfield, two one-year courses are offered: one at Our Lady of Providence Home for Children (which began in 1961 and is affiliated with Mercy Hospital in their nursery and pediatrics division); and the other at the Springfield Action Commission Project Head Start Day Care Aide Centre (which began in 1967) where aides are trained specifically to work with Head Start teachers. The Home for Children has trained 101 students and Head Start was training nine in 1967. In addition, the Massachusetts Department of Public Health, Division of Maternal and Child Health, has a thirty-hour upgrading program for day care personnel throughout the state. This program is offered four times a year in different locations and has trained 2000 aides since its inception in 1959.

The course at the Home for Children is one-third classroom and two-thirds practical or clinical training; while the Head Start course is on-the-job training with one hour of supervision for every six hours of work. The Department of Public Health course is all classroom training.

A high school diploma is required for admission to the Home for Children course and Department's course. In addition, the Home for Children sets an age limit of seventeen to twenty-five years. The Head Start course accepts candidates on the basis of character and personality without educational requirements.

The curriculum is designed by a registered nurse who has special pediatric training at the Home; by a social worker at Head Start; and by the state division professionals at the Department of Public Health. The Home offers a child care technician diploma, the state gives a certificate, and Head Start has no completion credentials.

Tuition at the Home for Children is $100 a year with a stipend. There is no tuition charge for the Head Start project, and a stipend is paid to the trainees by the referring agencies (Springfield Board of Public Welfare, OEO, and the Commonwealth Service Corps).

A faculty of two college graduates, one full-time and one part-time, teaches at the Home for Children. The Head Start program has eleven instructors who have master's degrees, diploma or professional certification, and a few with high school diplomas. The Department of Public Health has fifteen instructors with either master's or bachelor's degrees.

A typical curriculum is that of the one-year course at Our Lady of Providence School for Child-Care Technicians. Forty classroom hours are devoted to child growth and development; eleven hours to simple anatomy and physiology; ten hours each to professional adjustment, play and training, medical conditions, religion; and shorter periods to nutrition and moral ethics.

The eight-month clinical experience is in the nursery where the student, under the supervision of the clinical instructor learns to care for well infants five days old and older. The student learns formula preparations and the running of autoclaves. She spends two months with the toddler and preschool

DAY CARE AIDE cont.

child learning child management at tables, in bathrooms; toilet training; how to direct the child's play activities; and acceptable methods of discipline. In the two-month affiliation period at the hospital, she spends half the time in the newborn nursery, and the other half in the pediatric ward caring for sick infants and children.

Institution Offering the Training	Funding/Stipend	Length of Course	Eligibility
Mass. Dept. of Public Health, Division of Maternal & Child Health 88 Broad St., Boston 02110	State Salary	30 hrs.	Employees in day care centers & kindergartens throughout the state
Our Lady of Providence Home for Children Riverdale St., West Springfield (Affiliate) Mercy Hospital, Springfield	Home funds Tuition Stipends	1 yr.	17-25 yrs. H.S. graduate
Springfield Board of Public Welfare 756-760 State St., Springfield, 01109 (Affiliate) Springfield Action Commission. Project Head Start, 118 Alden St. Springfield	Fed. OEO Stipend	1 yr. (40 hrs. wk.)	Low income. Personal interview

DENTAL ASSISTANT

The dental assistant gives direct chairside assistance to the dentist, takes and processes x-rays, prepares dental materials, and sterilizes and cares for instruments. She also assists in the laboratory in the preparation of study models, waxes, dyes, and acrylic trays.

Eleven institutions in Massachusetts offer training in this field: eight technical institutions (two in Boston, one each in Canton, Fall River, North Adams, Quincy, Springfield, and Worcester), a university extension school (Northeastern), a Boston hospital (Beth Israel), and a university school of graduate dentistry (Boston University). The two oldest courses are at the Springfield Technical Institute (which started in 1947) and at the Beth Israel Hospital (which began in 1954). These two have graduated 645 to date. The other courses began between 1962 and 1967 and have graduated more than 370, bringing the total to over 1000 dental assistants trained in the past twenty years.

Most of the courses run for ten months (one school year), although the Boston University and Beth Israel courses are twelve months. The proportion of time spent in the classroom and in clinical

experience varies. The technical schools concentrate on classroom training (from two-thirds to three quarters of the course). The hospital and university extension courses are the reverse.

Three of the programs are approved by the American Dental Association, three by the American Dental Assistants Association, and one other by the Massachusetts Dental Society.

The courses are planned by the school faculties and advisory committees of local and regional dentists in accordance with the national professional standards. Training is divided into three phases - theory, technique and clinical practice. Theory includes such courses as histology, anatomy and physiology (as related to dental practice), oral hygiene, diet and nutrition, oral pathology, bacteriology, pharmacology, and anesthesiology. Techniques may include courses in the mixing of filling materials, tooth drawing, tray set-ups, dark room procedures, processing, mounting x-rays, sterilizing, and basic office management. Clinical practice involves using the learned skills in a practical situation such as assisting at the chairside during dental procedures. Boston University is the only school which has a course in psychology.

Five of the schools charge tuition: $650 at Beth Israel and at Boston University School of Graduate Dentistry; $700-$800 for non-residents at two of the technical institutes, and $1175 at the third. The other courses are funded by federal, state, and local sources.

Most of the faculties include from two to five full-time and part-time members and the class size averages twenty students. Northeastern has a larger program, a staff of fifteen, an average of sixty students each year, and is affiliated with four different clinics. All the programs have a D.D.S. or M.D. either on the permanent faculty of assisting in the clinical experience.

Institution Offering the Training	Funding/Stipend	Length of Course	Eligibility
Beth Israel Hospital. Dental Clinic 330 Brookline Ave., Boston 02215 Affiliate: Boston University Sch. of Graduate Dentistry	Hospital Tuition	12 mos.	H.S. diploma Personal interv.
Blue Hills Regional High School 100 Randolph St., Canton, 02021	School District	10 mos.	H.S. grad. Science and math.
Boston University, School of Graduate Dentistry, 80 E. Concord St., Boston, 02118 Affiliates: Brookline Health Center Kennedy Memorial Hospital University Hospital	Tuition	12 mos.	H.S. grad, skill in typing, biol. or chem. desired; pers. interview.

DENTAL ASSISTANT cont.

Institution Offering the Training	Funding/Stipend	Length of Course	Eligibility
Carnegie Institute 65 Anderson St., Boston, 02114	Institute Tuition	10 mos.	H.S. diploma
Diman Vocational School 45 Morgan St., Fall River	City -	10 mos.	H.S. graduate
Fanning Trade High School 24 Chatham St., Worcester, 01608	State Voc.Ed. Fed. MDTA	10 mos.	H.S. grad. pers. interview
McCann Vocational Technical High School Hodges Crossroad, North Adams, 01247	School District -	10 mos.	H.S. grad. Age 18-45, Aptitude test
Northeastern Univ. Ctr. for Contin. Educ. 360 Huntington Ave., Boston, 02115	University Tuition	9 mos.	H.S. graduate
Project Able, Quincy Voc-Technical H.S. 34 Coddington St., Quincy, 02169	Fed. & Local	9 mos.	H.S. grad. test
Springfield Technical Institute 1300 State St., Springfield, 01109	Fed., State & Local	10 mos. (1200 hrs.)	H.S. grad. test
Trade High School for Girls 56 The Fenway, Boston, 02115	Fed., State & Local	10 mos. (1200 hrs.)	H.S. graduate

DENTAL HYGIENIST

The dental hygienist is trained to work under the direction of a registered dentist in an office or clinic. She gives dental-prophylactic treatment, teaches patients prescribed methods for maintaining good dental health, exposes and processes dental x-rays, and inspects the mouth for defects that should be brought to the dentist's attention. The hygienist may also be called upon to assist the dentist in operative procedures.

Forsyth School for Dental Hygienists in Boston has been the only training center in Massachusetts for dental hygienists since 1917. From 1949-1963 the school was affiliated with Tufts University, and in 1963 it became affiliated with Northeastern University. In addition, there are arrangements with the Harvard and Tufts Schools of Dental Medicine, Boston City Hospital, two veterans' hospitals and several public schools. Beginning in 1968, Bristol Community College in Fall River plans to offer a dental hygienist's course granting an associate degree. It will be funded by state appropriations, accredited by the state Board of Higher Education, and approved for veterans' training.

From 1917-1950 the course at Forsyth was one year, but in 1950 a two year minimal requirement was established which made it possible to apply additional credits in liberal arts and basic science toward a baccalaureate degree. The current twenty-four month course is divided into three twelve-week quarter periods each year, with sixty percent classroom training and forty percent clinical experience. Since 1917 Forsyth has trained 2,940 dental hygienists.

A candidate must have a high school record which indicates ability to participate in a college program.

DENTAL HYGIENIST cont.

She is required to take Scholastic Aptitude Tests and achievement tests in English, Chemistry, Math I, and a dental hygiene aptitude test. After graduation, the candidate takes the board examination of the state where she intends to practice. With successful completion, she receives a license to practice under dental supervision. Northeastern University grants an associate degree in science, and the student receives a certificate in dental hygiene from Forsyth. The program is certified by the Council on Dental Education and the American Dental Association.

The curriculum, planned by a special committee, includes courses in: English, chemistry, biology, dental anatomy, introductory biological science, clinical dental hygiene, nutrition, microbiology, public health, histology, dental materials, anatomy, pathology, dental specialties, physiology, pharmacology, psychology, sociology, office procedures, and speech. The clinical practice is with clinics at a health department, two school systems, three hospitals and two university dental schools.

Institution Offering Training	Funding/Stipend	Length of Course	Eligibility
Forsyth School for Dental Hygienists 140 The Fenway, Boston, 02115 in coop. with Northeastern University	School Tuition	2 yrs. (academic)	H.S. and achievement tests. 17-18 yrs of age
Bristol Community College Box 133, Fall River, 02722	State Tuition	Unspecified Planned for 9/68	

DENTAL LABORATORY TECHNICIAN

The dental laboratory technician constructs oral appliances (known as prostodontics) in a dental laboratory according to dentist prescription. He frees the dentists for more patient time by doing much of the work in constructing dental restorations: dentures, crowns, bridges, and inlays.

The New England School of Mechanical Dentistry is the oldest institution in Massachusetts currently offering training for dental laboratory technicians. The school began in 1964 when it continued and broadened the training conducted by the Boston School for Mechanical Dentistry (in operation for approximately thirty years prior to 1964). In September 1967 the Town of Quincy began a two-year post high school course for dental laboratory technicians at the Quincy Vocational and Technical High School at the request of local dentists. The first class had seven members. The student takes four types of laboratory programs the first year, from which he chooses a specialty for his on-the-job training in the second year.

The New England School of Mechanical Dentistry,

DENTAL LABORATORY TECHNICIAN cont.

annually trains approximately thirty students in its day classes and about twenty at night school. The one year course in basic prostodontics teaches the general laboratory science of dental techniques and gives specific training in the design and manufacture of plastic base, removable oral appliances.

The course also contains basic instruction in gold casting. The first semester is one third lecture and two thirds laboratory, while the second semester is all laboratory with incidental lectures. The evening school meets three times weekly for four hours and covers the same material but takes twenty-two months (86 weeks).

A course in advanced prostodontics is available as a second year for the day student. It gives specific training in the design and manufacture of metal base, removable and fixed oral appliances, also accentuates tooth anatomy and occlusion.

At the School of Mechanical Dentistry a candidate must be seventeen years or older and a high school diploma is preferred. He must have good finger dexterity, color perception, patience, and a liking for detailed work. Tuition is $545 each semester, $1090 a year, for the day school and $990 for the 86-week evening school. At Quincy Vocational tuition is free and there are stipends the second year.

The student at the School of Mechanical Dentistry receives a certificate after completion of the basic prostodontics course, and a diploma on graduating from the advanced prostodontics program. The school assists with the placement of graduates. A certificate is granted at Quincy Vocational.

The National Board for Certification, an agency for the National Association of Certified Dental Laboratories, Inc., lists the expected minimum starting salary of a dental laboratory technician in 1967 as $60 a week - with the opportunity to earn up to $150 a week according to skill and experience. In managerial positions a technician may earn up to $250 a week. The national board projects a need for 20,000 new technicians within the next ten years. At present, only about 2,000 are at work nationally.

Institution Offering the Training	Funding/Stipend	Length of Course	Eligibility
New England Sch. of Mechanical Dentistry 553 Boylston St., Boston, 02116	Tuition	1 yr. (36 wks.) 2 yrs. (72 wks.) Evening (32 wks.)	H.S. grad. test Grad. 1 yr. course H.S. grad. test
Project Able, Quincy Voc. & Techn. H.S. 34 Coddington St., Quincy	Fed., Local Stipend 2nd. yr.	2 yrs.	H.S. grad. test

DIETARY ASSISTANT.

Dietary assistants are responsible for aspects of food preparation and distribution as assigned by the dietician or other food supervisor. Their duties vary according to the area in which they assist. They may prepare simple meals, short orders, or special diets; provide tray supervision or make direct checks on patients following meals.

There are three institutions in the Boston area offering this training: a nursing home, a rehabilitation center for the aged, and a veterans hospital. In Lowell, the Board of Public Welfare, Work and Experience Training Program offers training in affiliation with a nursing home. The first program was offered by the Veterans Hospital which has been training dietary assistants since the opening of the hospital. The other programs began in 1966 and 1967.

The courses vary in length from two weeks to twenty-two weeks with classroom instruction ranging from twelve percent to fifty percent of the total course, the rest being spent in practical areas.

The four institutions require of applicants literacy and responsibility. The Lowell Department of Public Welfare also requires that the applicant be an ADC welfare recipient.

Lowell and the Rehabilitation Center award certificates at the termination of the course.

The curriculum is designed by the director of the affilating nursing home in Lowell, by the Hospital and Research Trust at the Rehabilitation Center and by the teaching dietitian at the Veterans Hospital.

The instructors range from one part-time and two full-time instructors with diploma or professional certification to four full-time and one part-time clinical and theory instructor - all with diploma or professional certification. The Veterans Hospital has dietitians instructing the aides.

Institution Offering the Training	Funding/Stipend	Length of Course	Eligibility
Board of Public Welfare, Work & Experience Trg. Program, 100 Merrimack St., Lowell, & D'youville Manor Nursing Home 981 Varnum Ave., Lowell, 01852	Fed. OEO Stipend	6 mos. (22 wks.)	Low income. A.D.C.
Hebrew Rehabilitation Center 1200 Centre St., Roslindale, 02131	Fed. Labor Stipend	6 wks.	Low income. Literate
Linda Richards Nursing Home, Inc. 637 Washington St., Dorchester, 02124	Institute Stipend	Unspecified (Planned 10/67)	16 yrs. min. Pers. interview
Veterans Administration Hospital, Dietetic Serv. Belmont St., Brockton, 02401	Fed. VA Stipend	6 wks. (WA 3)	Literate. Understand instructions
University Hospital 750 Harrison Ave., Boston, 02118	-	4 wks.	-

DIRECTOR OF VOLUNTEERS

Massachusetts General Hospital offers a graduate course for directors of hospital volunteers services. Understanding the complexities of hospital organization and management, and the place of the volunteer department in the hospital structure, is the heart of the training program. The director of volunteers administrates and coordinates the volunteers' services.

The course was first given in 1961 and has continued on an annual basis training twenty-five since the course was first offered. Class sizes range from two to a limit of six to allow a maximum amount of individual study.

The course is four weeks, half classroom instruction and the remainder clinical experience and on-the job training. Tuition is $250.

The curriculum is designed by the director of volunteer services at Massachusetts General Hospital in consultation with the administration. There are ten to fifteen part time instructors and one full time, all doctors.

The course includes (a) an introduction to hospital administration - covering hospital personnel, interpersonal relations, hospital-community relations, patterns and principles of hospital auxiliaries, legal aspects of hospital volunteers, the role of volunteers in hospital disaster plans and the implications of Medicare; (b) the Volunteer Department-including organization; trustees' advisory committee, recruitment, interviewing and orientation of men, women and student volunteers, job analysis and job description, training, placement and supervision, records, reports; (c) the hospital recreation services, and (d) local, state and national hospital associations.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Massachusetts General Hospital Fruit St., Boston, 02114	Hospital Tuition	4 wks.	Cert. or deg. from post-H.S. institution, 2 yrs. equiv. exper.

ELECTROCARDIOGRAPHIC TECHNICIAN

The electrocardiographic technician, under the supervision of a cardiologist, operates the electrocardiograph (EKG) which records heart actions. He must be thoroughly familiar with the operation of the equipment and must know whether it is functioning properly. He may work in a hospital laboratory or at the patient's bedside. It is his responsibility to make sure the patient is as comfortable as possible as he adjusts the electrodes to the patients in the successive positions necessary.

North Adams Hospital has an EKG training program for persons who have graduated as medical

assistants from the McCann Vocational and Technical School in North Adams. The two-week course began in 1965 and is given annually. Four EKG technicians have been trained to date. A certificate is awarded upon completion of the course. There is no tuition charge and no stipends are available. The chief EKG technician at the hospital designs the curriculum and instructs the course.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
North Adams Hospital Hospital Ave., No. Adams, 01247	Institute	2 wks.	McCann Voc. H.S. medical assistants

ELECTROENCEPHALOGRAPHIC TECHNICIAN (EEG)

The electroencephalographic technician is trained to operate and maintain the EEG machine which records the electrical activity of the brain. It is most helpful in the diagnosis of epilepsy and several other diseases of the nervous system. For practical reasons the EEG technicians have to work most of the time with the patient without the assistance of the doctor, thus EEG technicians must have good knowledge of the field and uncommon ethical qualities. At Massachusetts General Hospital the technician is trained solely to work with the EEG, but at Children's Hospital he is also trained to work with the electrocorticograph (which uses electrodes inserted in the brain), and the electrocardiogram which records the heart.

EEG technician training was first given in 1937 by the Massachusetts General Hospital on a bi-annual basis, and sixty-five technicians have been trained there since then. In 1951 the Children's Hospital Neurological Department Seizure Unit, in affiliation with Peter Bent Brigham Hospital, instituted an EEG training program which has graduated 146. There are four to six persons in each class at Massachusetts General Hospital and about nine at the Children's Hospital. A course at the Naval Hospital is given every six months.

The three hospitals require the applicant to have a high school diploma. Children's Hospital prefers also two years of college with a science background. However, the serviceman applicant at the Naval Hospital program needs only an achievement score of 100 in general comprehension and arithmetic. There is no charge for tuition in any of the institutions and the hospitals offer a stipend up to $200 a month, but students must provide their own room and board.

The length of the course is twelve months at Children's Hospital, seven months at Massachusetts General Hsopital, and six months at the Naval Hospital. Clinical experience predominates in all the courses, and classroom training varies from five percent to fourteen percent of the programs.

The program at Children's Hospital covers: (1) a series of lectures on basic neuroanatomy,

ELECTROENCEPHALOGRAPHIC TECHNICIAN cont.

neurophysiology, neuropathology, and clinical neurology with necessary correlation between EEG finds and diseases. There are also lectures on first aide, psychology, pediatrics and special neurophysiology techniques used in the department; (2) a course in basic electronics with special reference to the EEG machine and demonstration lectures in physics; (3) informal "EEG reading demonstrations" in order to learn how to interpret tracings; (4) on-the-job training in the laboratory with rotation in the different EEG laboratories.

The shorter courses at Massachusetts General Hospital and the Naval Hospital consist of lectures and individual group sessions on (1) electronics and basic electricity; (2) anatomy and diseases of the brain, and (3) technics of EEG.

A certificate is granted by each of the three hospitals. At Children's Hospital and Massachusetts General Hospital the trainees take an examination which makes them eligible for certification by the American Society for EEG Technicians. The Naval certification is based on the Bureau of Medicine and Surgery's curriculum.

The faculty at the Children's Hospital includes two part time MDs; at Massachusetts General Hospital, two full time MDs and one instructor with a bachelor's degree; and at the Naval Hospital, four part time doctors instruct.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Children's Hospital Med. Center 300 Longwood Ave., Boston, 02115	Fed. HEW Childr. Bur. Stipend	12 mos.	H.S, grad. science backgr. Up to 2 yrs. college
Massachusetts General Hospital Fruit St., Boston, 02114	Fed. USPHS Stipend	7 mos. on-the-job	H.S. diploma
Naval Hospital 1 Broadway, Chelsea, 02150	Fed. Navy	16 wks.	Naval service Achievement tests

EMBALMER

The embalmer prepares and preserves the dead for funeral and burial, restores mutilated parts, assists and counsels with the family in planning funeral arrangements, assists in conducting the last rites, and is able to operate a mortuary establishment.

The New England Institute of Anatomy, Sanitary Science, Embalming, and Funeral Directing has offered this training since 1907 and has graduated several thousand students. The institute is affiliated with Tufts Medical School in its embalming course. The day course is twelve months and the

night course is eighteen months. Classroom and laboratory work comprise ninety to ninety-five percent of the course. The rest is practical or clinical experience.

Applicants need a high school education or its equivalent. A diploma is awarded to the graduate after completing the program which is accredited by the National Association of Colleges of Mortuary Science and the American Board of Funeral Service Education.

The curriculum is designed by the faculty accordance with state licensing requirements. There is a faculty of four full time and sixteen part time instructors whose degrees range from professional certification to post doctoral. Tuition is $980.

The comprehensive course for sanitary science and embalming includes English and speech; social studies and humanities - historical trends, general psychology, introduction to the humanities and modern philosophy, and funeral service psychology; basic sciences - chemistry, anatomy, anatomy laboratory; health sciences - public health and hygiene, microbiology, pathology; business administration - principles and accounting; mortuary arts and sciences, embalming, restorative art; and mortuary administration - funeral procedures and ceremonies; and mortuary management and law.

Institution offering the course	Funding/Stipend	Length of course	Eligibility
New England Institute of Anat. & Embalm. 656 Beacon St., Boston, 02215 (Affiliates) Harvard Medical School, Shattuck St., Roxbury Tufts Medical School Harrison Ave., Boston	Tuition	1 yr. day 18 mos. eve.	H.S. Grad. or equiv.

EXECUTIVE HOUSEKEEPER

In the one hospital which reports a program for training an executive housekeeper, the duties of this position include planning and directing the activities of the hospital's building management division, environmental sanitation, the laundry-line section, and interior decoration.

The Veterans Administration Hospital of Bedford has offered training for this function since 1954 and trains executive housekeepers for the Veterans Administration Hospital system with federal funds. To qualify for training, the applicant must pass the Federal Service Entrance Exam. Upon completion of the course, a certificate is awarded.

The program is 1500 hours of instruction, seventy-five percent classroom and twenty-five percent practical experience. The training is designed by the Veterans Administration. There are two full time and ten part time instructors. Half the instruction time is spent on sanitation management and laundry-linen management, another quarter of the time on program planning and managing, and on building management activities. The remainder of the curriculum covers the introductory orientation, personnel administration and hospital administration.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Veterans Administration Hospital, Building Management Division 200 Springs Rd., Bedford, Mass. 01730	Fed. VA Salary	1500 hrs.	Must pass Fed. Service entrance exam.

FOOD SERVICE WORKER

The food service worker has a wide range of jobs involving food storing, preparing, cooking, serving, and basic sanitation procedures. On certain jobs the food service worker oversees the assembling of trays sent to the wards. He assembles appropriate foods for food tray service under instruction from the dietary staff. He transports trays to and from patients' bedsides, noting & reporting food acceptance and/or patient complaints. He may also be in charge of cleaning procedures after meals, or he may be a chef, a pastry cook, or a professional in food preparation.

Three hospitals have reported inservice training programs for food service workers at the entry level. The Veterans Hospitals offer training at three levels, allowing those who take additional instruction to assume more responsibility and be upgraded. Miss Farmer's School of Cookery offers courses in the more professional aspects of food preparation and management: courses to train chefs, cooks, pastry chefs, salad workers, decorators (besides the managerial tasks described under food supervisors). Fanning Trade High School offers a course which concentrates on training persons now employed in nursing homes, although others are also admitted.

The ten sessions of the Fanning Trade School course cover: basic nutrition orientation, menu planning, therapeutic diets, food purchasing, membership on the nursing team, sanitation and safety with student menu planning, food demonstrations and discussions.

At Miss Farmer's, the first half of the one year course is devoted to acquiring basic skills and knowledge through demonstration lectures, laboratory practice, meal preparation, classroom lectures, field trips and tests. The emphasis in the second half year is on the commercial food operation with quantity meals and more advanced phases of pastry work and garnishing. Topics covered are: dietetics, basic food, history of foods, bookkeeping, meat cookery, menu planning, terminology, food costs, dining room management, personnel problems. The four-month intensive course at Miss Farmer's, for the adult worker with previous experience, stresses complete training in food preparation and extensive knowledge in cooking methods, techniques, and food education.

The inservice courses at Veterans Hospitals include classes in orientation, personnel practice, formal and informal classes held by cooks, supervisors, dietitians and members of the medical and laboratory staff, sanitation lectures, films. Emphasis is placed on following printed instructions and diet menus. Additional training provides knowledge of simple and complex modified diets and combination diets. All become familiar with kitchen equipment.

Miss Farmer's School of Cookery has provided courses since 1879. Presently, it offers a one year professional course, a four-month intensive course, and a summer program. The Veterans Administration hospitals (Brockton and Bedford) have each given training since their establishment. This is on-the-job training with about twenty percent classroom instruction. The ten-week course at the Fanning Trade High School is about one third classroom instruction. Twenty to thirty hours of on-the-job training orientation is provided at Cambridge City Hospital.

The curricula for the hospitals is designed by the head dieticians. At Miss Farmer's, it is designed by the president and director of the school.

Fanning Trade High School and Miss Farmer's award certificates upon completion of their courses, but the hospitals do not. The hospital instructors are dieticians and their average number is five. The four instructors at the Trade High School have master's degrees. The nine instructors at Miss Farmer's each has at least a college degree.

All the hospitals are accredited by the Joint Commission on Accreditation of Hospitals and the Commonwealth of Massachusetts. The two educational institutions are licensed by the Massachusetts Department of Education.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Cambridge City Hospital 1493 Cambridge St., Cambridge, 02139	Fed. OEO Salary	Unspecified	Low income. Title V & Youth Corps.

continued next page

FOOD SERVICE WORKER cont.

Institution Offering the Training	Funding/Stipend	Length of Course	Eligibility
Fanning Trade High School (Cook) 24 Chatham St., Worcester, 01608	State, Federal & City	30 hrs. evening	Employee nursing home
Miss Farmer's School of Cookery 40 Hereford St., Boston, 02115 (chefs, cooks, pastry chefs, supvrs., managers, stewards, salad workers, decorators, demonstrators, research workers	School Tuition	1 yr. (32 wks.) prof. course 4 mos. intensive Summer (180 hrs.)	H.S. diploma or equiv. Experienced adults Experienced professionals
Veterans Administration Hospital 299 Spring Rd., Bedford, 01730	Fed. VA Salary	25 hrs. in service	New workers
Veterans Administration Hospital Belmont St., Brockton, 02401	Fed. VA Salary	Orientn. Classes for WA 1 job	Read & understand instructions
Other courses in same hospital	Fed. VA Salary	Further training for WA 2 job	Experience as WA 1 worker
Other course in same hospital	Fed. OEO	15 hrs. wk. on-job	Neighborhood Youth Corp.

FOOD SUPERVISOR

A food supervisor serves as an assistant to the dietician. She supervises the food service employees and daily operations, including food preparation, sanitation, food and supply orders, and bookkeeping. Her duties vary according to the size of the institution.

Miss Farmer's School of Cookery offers a one year professional course, and a four month course for food supervisors which is half classroom and half practical experience. Garland Junior College offers a one year course (after completion of the first year of liberal arts) which is all classroom except for three weeks in the field. Garland is affiliated with many institutions in Boston for the field work. The Dining Service at the Massachusetts Institute of Technology has a three month inservice training program for it's two-year food majors, in cooperation with Stouffer's Food Service.

Miss Farmer's School requires a high school diploma or its equivalent for the one-year professional course. Garland requires a high school diploma and the applicant's S.A.T. scores. The curriculum at Miss Farmer's is designed by the director and the president emeritus; at Garland by the food department faculty; and at M.I.T. by the coordinator of the Dining Service. The program at Miss Farmer's includes courses in menu preparation, restaurant practice, dietetics, basic food, history of foods, bookkeeping, meat cookery, terminology, food costs, dining room management, and personnel problems. The food and nutrition major at Garland includes courses in advanced food, quantity cookery,

FOOD SUPERVISOR cont.

nutrition, communication in food and nutrition, and institutional management.

Miss Farmer's School awards a certificate for the four month course and a diploma for the one year course. Garland's program gives an associate science degree and is certified by two professional associations. The three programs are privately funded. Tuition at Miss Farmer's is $300 for the four month program and $1240 for the one year course. At Garland she tuition is $1350 a year.

Stouffer's Food Service, affiliated with M. I. T., pays a regular salary for the inservice training period.

There are five full time and three part time instructors at Miss Farmer's whose degrees range from professional certication to one Ph.D. Garland has three full time and three part time instructors with MAs and BAs. M. I. T. has three full time supervisors with college degrees.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Miss Farmer's School of Cookery 40 Hereford St., Boston, 02115	School Tuition	1 yr. (32 wks.) 4 mos. intensive	H.S.Dipl.or equiv. exper. Experienced adult
Garland Jr. College, Home Econ. Dept. 409 Commonwealth Ave., Boston 02115	College	2 yrs. (1 yr. major)	H.S. grad. & tests
Massachusetts Inst. of Technology 77 Mass. Ave., Cambridge Aff: Stouffers Mgmt. Food Serv. Div.	Company Salary	3 mos. on-job	2 yrs. college (Food major)

GERIATRIC AIDE (See Nurse Aide Supplementary Course)

HEALTH AIDE

The health aide is trained to work at entry level in a multitude of health settings, nursing aide, dietary aide, attendant, rehabilitation aide, ward clerk, or other. The Training Center for Comprehensive Care has developed a core curriculum to train multi-purpose health personnel (male or female) who are able to work at one skill or interchangeably at several depending on the setting.

The program was first offered at the Training Center in November 1967 with twenty people participating. Trainees attend eight weeks of classes with clinical instruction and then receive eight weeks of on-the-job training in hospitals, nursing homes, and home health agencies.

Trainees must be in the low income bracket, be able

HEALTH AIDE cont.

to read and write, have emotional and physical capability to accept the required responsibilities. A stipend of $1.92 an hour for sixteen weeks is paid to participants by the U. S. Department of Labor under the Scheuer program, but the whole project is funded by the Office of Economic Opportunity. A certificate is given at graduation.

The core curriculum is designed by a committee composed of nurses, a psychiatrist, a nutritionist, a personnel director, four educators, a physical therapist, a teacher, and a social worker. The faculty consists of two full time members, a registered nurse and a social worker, and twelve part time instructors, including those with MDs and PhDs, MAs, BAs and professional certification.

The curriculum covers the basic clinical skills and knowledge about nutrition, mental illness, emotional aspects of illness, personnel policies and social hygiene. One quarter of the course hours is spent on comprehensive patient care, another quarter on clinical practice, half covers the following topics: the health field, team and occupations, principles and resources in health work, physical and mental concepts of health, personal health (physiology, emotional, etc.), public health and its resources, concept of physical medicine, nutrition, maternal and child health and aging, mental illness, applied principles (communication, observation, reports and records), environmental safety, basic first aide, illness (conditions, signs and symptoms, stages, management, surveys, resources, chronic disease); and health careers.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Training Ctr. for Comprehensive Care 170 Morton St., Jamaica Plain 02130	Federal - Dept. of Labor - OEO	16 weeks	Low income
Affiliates: 3-6 Boston hospitals	Stipend		

HEMATOLOGY TECHNICIAN

The hematology technician specializes in laboratory diagnosis procedures for the evaluation of blood disorders and works under a pathologist or the physician who directs the medical laboratory.

The Laboratory Medical Service at Lemuel Shattuck Hospital has offered courses for training hematology technicians twice since 1966 and has trained twenty-six technicians. The curriculum for the thirty-five hour course is designed by the chief of laboratory medicine at the hospital. It is thirty percent classroom and seventy percent clinical instruction. The course is for employed technologists with at least one year's experience in the laboratory. After completion of the course, participants will qualify as hematology specialists.

HEMATOLOGY TECHNICIAN cont.

The program is funded by the United States Public Health Service and tuition is free. The faculty consists of five part time teachers, three MDs and two with college degrees.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Lemuel Shattuck Hospital 170 Morton St., Jamaica Plain 02130	U.S.P.H.S.	35 hours	One yr. lab. exp.

HISTOLOGY TECHNICIAN

The histology technician works in the laboratory and specializes in cutting and staining body tissue for microscopic diagnosis.

Boston City Hospital has trained many histologists since 1931. The course is six months on-the-job training with about five percent classroom orientation.

To qualify, an applicant must have two years of college or one year of previous laboratory experience. The course is designed by a doctor at the hospital and is taught by two full time instructors with high school diplomas and experience.

There is no tuition charge for the course.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Boston City Hosp. Mallory Inst. of Patho. Research, Massachusetts Ave., Boston	City & Mass. Cancer Assn./Stipend	6 mos.	2 yrs. college or 1 yr. exp.

HOMEMAKER

A homemaker manages the home during the absence or illness of a parent and gives support to older people so that they can remain in their own homes.

In the city of Boston, there are seven agencies offering training. The Family Service Association was the first, starting in 1950. In addition, Fitchburg and Springfield each have one agency which offers homemaker training; and in Worcester, David Hale Fanning Trade High School began a program in 1964 which is presently affiliated with four homemaker agencies. Approximately 700 homemakers have been trained in Massachusetts since 1950. The institutions offering the training are non-profit social agencies, with the exception of the Trade School which is under state sponsorship and is accredited by the Massachusetts Department of Vocational Education.

HOMEMAKER cont.

The training varies. In the Boston agencies the amount of classroom training ranges from 16 to 135 hours (15 weeks). David Hale Fanning has three eight-week sessions, each having one two-hour period per week of classroom instruction. Springfield and Fitchburg have some inservice training but mostly on-the-job training experience under supervision.

To become a homemaker, a woman must have experience in running a home. The majority of agencies offer the course to their employed homemakers. The three programs funded by the Office of Economic Opportunity offer their training to welfare recipients or women with low family incomes. Most of the agencies award a certificate at the end of training, but there is no state or professional certification for homemaker training in Massachusetts.

Tuition is free and six of the ten courses offer a stipend or salary during training. Faculties vary in size from one full time instructor to two full time and thirteen part time.

The participating social service agencies in Greater Worcester offer a typical curriculum in their eight-session course. The topics are: working with people in trouble, personal care, feeding the family, home management for visiting homemakers, working with children, understanding the elderly, and service to the mentally ill. The curriculum of another course covers similar ground but also includes sanitation, safety, clothing and family economics as separate topics.

While there has been a trend since 1966 to shift the training to the combined function of home management and personal health care, there is still a definite need for persons trained only as homemakers since many situations require just this type of training and it is inefficient use of manpower to employ those with combined training in the homemaker role.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
American Red Cross (Mother's Aide) 17 Gloucester St., Boston 02115	Agency funds	12 hrs. 4 sessions	Anyone
Catholic Social Service 53 Highland St., Fitchburg 01420	Service funds Stipend	8 2-hr. sessions	Personal qualif. 17 yr. min.
Child & Family Service of Springfield 184 Mill St., Springfield 01100	Service funds Stipend	On-the-job training	Mature woman, had children/equiv. exp
Family Service Assn. of Greater Boston 34½ Beacon St., Boston, Mass.	Assn. funds Salary	8 wks.(2 hr. wk.)	Empl. as homemaker Pers. interv. refs.
David Hale Fanning Trade High School 24 Chatham St., Worcester 01608 with: Catholic Charities, Family Service Org., Jewish Family Service, State Dept. of Child Guardianship, and Worcester Welfare Dept.	Fed., St., Loc. Salary	2 yrs. (6 courses each 8 wks., 2 hrs. a wk., evenings) Total 96 hrs.	

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Institution offering the training	Funding/Stipend	Length of course	Eligibility
Jewish Family & Children;s Service 18 Cornhill St., Boston, Mass.	State Priv. Stipend	8 wk. units once a wk. for yr.	Pers. interview
Roxbury Fed. of Neighborhood Ctrs. Aging Dept. 14 John Eliot Sq., Roxbury02119(home aides)	Fed. & Priv.	40 hrs.	Low income. Grade school
South End Neighborhood Action Prog.,Inc.,(SNAP) 760A Tremont St., Boston,(Home management)	Fed.OEO Stipend	2 hrs. wk. in-service	Low income
United South End Settlements (Home management) 20 Union Park, Boston, 02118, conducted at Shawmut Neighborhood Ctr.277 Shawmut Ave.Bos.	Fed. OEO Stipend	15 wks. (135 hrs.)	Welfare recipient
Women's Educ. & Industrial Union, Spec.Serv.Dept. 264 Boylston St.,Boston 02116(Homemaker Asst.)	Fed. OEO Stipend	10 wks. (80 hrs.) + once mo. ongoing	Low income. Under 65. Literate

HOMEMAKER - HOME HEALTH AIDE

A homemaker-home health aide is trained in basic skills of personal care to enable them to provide health service as well as maintenance and management in the home. The homemaker-home health aide combines the functions of the homemaker and the home health aide. (See the summaries preceding and following text.)

In Massachusetts, there are thirteen training programs for this job. Nine community service agencies follow the standards established by the Massachusetts Department of Public Health, Division of Adult Health: Brockton, Holyoke, Hyannis, Lawrence, Lowell, Martha's Vineyard, New Bedford, Quincy and Taunton. Two others are community service agencies (Swampscott and Malden); one in Fitchburg is affiliated with the David Hale Fanning Trade High School; the other is a medical training center in Jamaica Plain.

The earliest training was given at the Quincy Family Service in 1961; the majority of others have begun training since 1964. The programs which follow the guidelines of the Division of Adult Health have graduated approximately 850 homemaker-home health aides, the two community agencies about 50, and the Training Center, 39, a total of over 950 trained homemaker-home health aides (most of them trained since 1964).

The agencies following the curriculum of the Division of Adult Health have their trainees attend weekly evening sessions of two to three hours over an eight week period, a new set of topics is scheduled six times during a two year period while the trainees are employed as homemaker-home health aides. The Children's Aide and Family Service in Fitchburg has sixty-four hours evening training sessions at David Hale Fanning Trade High School while their trainees are on the job. The Homemaker Service of Greater Lynn in Swampscott has forty-eight hours training over

HOMEMAKER - HOME HEALTH AIDE cont.

an eight week period with on-going sessions. Malden Action, Inc. has a four month course and the Training Center for Comprehensive Care conducts a four week classroom and four week on-the-job training program.

Entrance requirements vary. Education is not a necessity, but the trainee must be literate and have experience in running a home. Children's Aide and Family Service require the trainees to be over twenty-one years; the Training Center has an age minimum of forty-five years for low income persons; and the Homemaker Service in Swampscott also requires low income.

Most of the agencies award certificates for successful completion of the training. The curriculum at Malden Action is designed by the director of program development with an advisory committee from community service agencies and health offices. At the Training Center the instructor of aides designs the program. The others follow the guidelines of the Division of Adult Health.

Tuition is free. Three of the agencies have stipends, two of which are funded by the Office of Economic Opportunity. The other agencies pay a salary and are funded by their own general income.

Staff sizes range from one full time postgraduate with five part time instructors (Training Center) including two with BAs, and two with diplomas or professional certification, to nine part time instructors whose degrees include MAs, BSs, diplomas and professional certification.

The training courses follow a two-part pattern: (1) teaching practical skills in patient care and clinical experience; and (2) developing in the aide an attitude toward understanding people and their problems. Course topics include: personal care, hygienic practices, safety, comfort, simple psychology, stages in illness, prevention of communicable disease, rehabilitation process, nutrition and meal planning, food purchase, child care and care of the aged, home management. Discussions which concentrate on attitudes include: human needs, factors in behavior, understanding individuals and family patterns, the effect of illness upon the individual and family, understanding the elderly, children and the handicapped, ethical considerations (confidentiality, loyalty and responsibilities) and agency policies.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Children's Aid & Family Service, Inc. 47 Holt St., Fitchburg, 01420	Service funds Stipend	64 hrs. eves.On job	Age 21 min.;exp. with own home 3 yrs.
Homemaker Service of Greater Lynn, Inc. 73 Pine St., Swampscott, 01907	Service funds Salary	8 wks. (48 hrs.) + ongoing sessions	Employed with agency
Malden Action, Inc. 341-A Forest St., Malden, 02138	Fed. OEO Stipend	4 mos.	Low income
Training Center for Compr. Care, 170 Morton St., Jamaica Plain, 02130	Fed. OEO & HEW Stipend	8 wks	Age 45 min. Low income

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Institution offering the training	Funding/Stipend	Length of course	Eligibility
Training programs following the guidelines of the Division of Adult Health, Mass.Dept.Pub.H.	Local agency funds	10 sessions 2-3 hrs. ea.	Mature. Previous experience with housekeeping.Literate Pers. qualific.Refs.
Brockton: Brockton Family Service, 106 Main St., Brockton 02401			
Holyoke: Holyoke Visiting Nurse Assn., 315 Maple St., 01040			
Hyannis: Cape Code Homemaker Service, 298 Main St., 02601			
Lawrence: Gr. Lawrence Homemaker Service, Lawrence Gen. Hosp., 1 Garden St., 01842			
Lowell: Family Service Assn. of Greater Lowell, 16 Shattuck St., 01850			
Martha's Vineyard Visiting Nurse & Homemaker Service, Martha's V., Box 815, 02568			
New Bedford Homemaker Service of Gr. New Bedford, 106 Spring St., 02740			
Quincy: Quincy Family Service, 1359 Hancock St., 02169			
Taunton: Taunton Visiting Nurse Assn., Inc., 14 Church Green, 02780			

HOME HEALTH AIDE

Home health aides supplement the professional health services by giving personal care to the patient in the home under the supervision of a registered nurse.

Five institutions in the Boston area train home health aides and there is also training in Fall River, Pittsfield and Worcester. The Red Cross in Boston was the first organization to offer such training, beginning in 1917. This was for home nursing and mother and baby care. All the other training listed began in 1966.

The course length varies from ten hours (Visiting Nurse Association of Boston) to four months, (Senior Citizens Multi-Purpose Center in affiliation with the V.N.A. of Pittsfield). Classroom training is thirty-five percent of the course at the Women's Educational and Industrial Union in Boston and 100% at the V.N.A. in Boston. On-the-job training varies from none to sixty-five percent of the total training.

All but two of the organizations require only literacy and maturity as criteria for taking the course. One program is for welfare recipients under sixty-five years who have previous training as homemaker assistants, and another requires the trainee to be over twenty-one years. Tuition for all training is free. Only three institutions provide a stipend or salary during the training period. Certificates are awarded upon completion of the course in all but two institutions.

In most cases, the instructor at the agency, usually a public health or registered nurse, designs the curriculum. The Hospital Education and Research Trust designs curriculum at the Rehabilitation Center in Roslindale, and the state designs the course for Citizens for Citizens in Fall River. The trainees are instructed in nutrition, light housekeeping, personal care, bed positioning and assistance in walking, preventive and safety measures, following nurse instruction for medication, dressings, simple test. Some courses also include

HOME HEALTH AIDE cont.

occupational therapy activity, programming and understanding of social case work (the family, stresses of illness, etc.). A large part of the training, however, is done by the nurse in the patient's home as it relates to the needs of the family.

Faculty size and composition ranges from one part time instructor with a college degree to one full time and six part time instructors with BAs, post-graduate education and MAs.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
American Red Cross (Home Nursing) 17 Gloucester St., Boston, 02115	Agency funds	12 hrs.	Anyone
American Red Cross (Mother & Baby Care) 17 Gloucester St., Boston, 02115	Agency funds	12 hrs.	Anyone
Citizens for Citizens, Inc. 388 Rock St., Fall River, 02720	State, MDPH No Stipend	Planned 8-10 wks.	Mature. Raised a family
Hebrew Rehabilitation Center for the Aged 1200 Centre St., Roslindale, 02131	Fed.Dept.Labor Stipend	6 wks.	None established
Senior Citizens Multi-Purpose Center 258 North St., Pittsfield, with Visiting Nurses of Pittsfield, Warner Bldg., 741 North St., Pittsfield	Fed.HEW.Aging	4 mos.	Unspecified in planning
Visiting Nurse Assn. of Boston 14 Somerset St., Boston, 02108	State grant	10 hrs.	Personal interview
Visiting Nurse Assn. of Worcester 50 Elm St., Worcester, 01609	Assn. funds Salary	25 hrs. plus	Mature woman. Personal interview
Women's Educ. & Industrial Union.Spec.Serv.Dept. 264 Boylston St., Boston, 02116 with the Visiting Nurse Assn. of Boston	Fed.OEO Stipend	2 wks. plus	Welfare recipients Under 65. Completed homemaker asst. crs.

HOUSEKEEPING AIDES

The housekeeping aide (or porter) performs custodial and sanitation maintenance duties in patient and administrative areas of a hospital.

The Building Management Division of the Veterans Administration hospital in Bedford has offered a four week on-the-job training program for its own employees since 1960.

Rutland Heights Hospital (state) has a fifteen hour course spread over seven weeks which is all classroom instruction. The curriculum is designed within the institution by the V.A.'s chief of Building Management Division and Rutland's health educator. Personnel currently employed in the housekeeping department are eligible and the trainees are on salary during training. The hospital in Rutland has trained thirty-five housekeepers and porters since June 1967.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Veteran's Administration Hospital.Bldg.Mgmt. Div., 200 Springs Rd., Bedford, 01730	Fed.VA Salary	4 wks. on-the-job	U.S. Civil Service Commission
Rutland Heights Hospital Rutland 01543	State	4 wks. o-j-t: 15hrs.	Empl. at hospital

INFORMATION CLERK

Information clerks in a hospital are trained as switchboard operators and clerk typists and act as receptionists.

The Board of Public Welfare, Work Experience Training program has offered a twenty-two week program since February 1967 in affiliation with D'Youville Manor Nursing Home. The curriculum is designed by the director of nursing. Four hours a week are devoted to classroom instruction and twenty-one hours to clinical experience.

The trainees must be A.D.C. recipients. They receive a weekly stipend from the Title V, Office of Economic Opportunity funds.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Bd. of Public Welfare Work Exp. & Training Prog. 100 Merrimack St., Lowell, 01852	Fed.OEO Stipend	6 mos. (22 wks.)	Low income. Welfare recipients. A.D.C.

INHALATION THERAPIST

The inhalation therapist is responsible for seeing that all patients receive an adequate supply of oxygen, for the care and maintenance of equipment, the humidification of inspired atmosphere, assistance in the administration of IPPB, and care of artificial ventilations. The therapist also performs routine pulmonary function tests and administers pulmonary therapy.

Courses in inhalation therapy are relatively new in the health field. Training began in Massachusetts in 1965 at the Boston City Hospital and the Springfield Technical Institute. There are three programs in hospitals, one at Northeastern University, and one at the technical institute in Springfield.

In order to be accepted into the program, a student must have a high school diploma. Two of the programs have mathematics and science prerequisites. One hospital awards a stipend, the other three have tuitions ranging from $300 (hospital) to $1350.

Graduates are all employed by hospitals in the area in which they are trained. The courses are given annually and altogether sixteen therapists have been trained.

Four courses award certificates, a nine to twelve-month course, two twelve-month courses, and an eighteen-month course. Northeastern University's three year course (including cooperative work periods) leads to an associate degree in science.

The American Medical Association's Board of Schools of Inhalation Therapy sets the curriculum standards for the approved schools. These specifications are adapted by each institution to fit its teaching conditions and state and local educational requirements.

Springfield Technical Institute in cooperation with Mercy Hospital offers a representative curriculum: 315 hours of preclinical work in basic sciences (anatomy and physiology, bacteriology, chemistry, and psychology), and related sciences (terminology, nutrition, business practice, communication skills, ethics and administration, nursing arts, and laboratory practice). Over three quarters of the course is clinical experience, the rest is spent in applied sciences (physics and chemistry, anatomy and physiology and pathology), in theory of procedures, and in clinical application to specialties (emergencies, medicine, obstetrics, pediatrics, general thoracic surgery, and neurosurgery).

The course at Northeastern, which is longer and offers an associate degree, covers similar topics but also adds English, anthropology, sociology, to the studies. Four of the institutions report that they offer pulmonary function testing as part of the course.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Boston City Hospital 818 Harrison Ave., Boston, 02118	Hospital Tuition	9-12 mos.	H.S. or equiv. Under 30 yrs. pref.
New England Medical Center Hospitals 171 Harrison Ave., Boston, 02111	Hospital Stipend	18 mos.	H.S. graduate

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INHALATION THERAPIST cont.

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Institution offering the training	Funding/Stipend	Length of course	Eligibility
Northeastern Univ. Div. of Allied Med.Sciences 360 Huntington Ave., Boston, 02115 Affiliates: Harvard Univ. Hospitals (Beth Israel, Children's, Mass. General, New England Deaconess, Peter Bent Brigham)	University Tuition	3 yrs.(incl. coop) work periods)	H.S., science & math Tests
Springfield Technical Institute 1300 State St., Springfield, 01109 Affiliate: Mercy Hospital, Springfield	Fed., State, City funds	1 yr. (10 mos.)	H.S., Tests, Personal interview
St. Vincent Hospital 25 Winthrop St., Worcester, 01604	Hospital Tuition	12 mos.	H.S. , sciences, tests.

INHALATION THERAPY SUPPLEMENTAL COURSE

Institution offering training	Funding/Stipend	Length of course	Eligibility
Lemuel Shattuck Hospital 170 Morton St., Jamaica Plain 02130 (for pulmonary function testing)	State	30 hrs.	Emp. as inhal. therapist

LAUNDRY SUPERINTENDENT

A laundry superintendent supervises the laundry-linen service in the building management division of a hospital.

The Veterans' Administration Hospital, Building Management Division has offered training since 1966 for its own facility.

The curriculum is designed by the V.A. Central Office and the chief laundry superintendant. The course is 1920 hours with thirty percent classroom and seventy percent clinical and on-the-job experience.

A certificate is given at completion of the course. A salary is paid during training.

The program consists of work flow and scheduling; washing machine operation; establishing and maintaining washing formula; stain removal; flat-work ironer operations; pressing operations; production standards; and records, reports and manuals for procedures. After this formal instruction the training has 900 hours of practical application of all laundry functions. The course is taught by one full time and five part time instructors.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Veterans Administration Hospital 200 Springs Rd., Bedford, 01730	Fed. V.A.	1920 hrs.	Exper. Personal interview

LICENSED PRACTICAL NURSE

The licensed practical nurse works under the direction of a professional nurse or physician and is chiefly concerned with bedside care of patients. In some cases, she may administer prescribed medications and treatments. With patients who are not seriously ill, she may have direct responsibility.

Thirty-eight institutions in Massachusetts offer licensed practical nurse training. Over half of these are publicly owned. The majority of the training is in Boston and Greater Boston (eleven courses). Southeastern Massachusetts has eight courses; western Massachusetts and central Massachusetts seven and six respectively; northeastern Massachusetts has four; and the Cape and Islands have two.

Half of the courses are offered by postgraduate high schools, thirty-four percent by general hospitals, and the remainder are conducted by mental hospitals, a nursing home, and a college.

Between 1900 and 1940 four institutions started centers for training practical nurses. Then, in the next twenty-five years (between 1940 and 1965) nineteen were opened. The increase continued steadily, one, two, three programs were initiated each year from 1960 to 1966 resulting in a total of thirty-eight courses in the state. These programs report that 8,444 licensed practical nurses have been trained in Massachusetts since 1900. (Eight percent did not specify).

Of the thirty-four institutions reporting, over half stated that they train from 6 to 19 students each year, the rest train from 20-50 annually, except for one which reports 81 trained.

The admission requirements encourage a wide range of applicants. Twenty-five of the programs require experience in the field, maturity, or personality traits suitable to nursing. Nine specify a high school education, and two require two years of high school.

The graduates of over half the courses find employment in the local or regional area. The rest are placed throughout Massachusetts, New England, or the entire United States, principally in hospitals and nursing homes. Only one of the programs reports training primarily for its own institution.

Almost all (thirty-one) of the training courses have regional affiliations, half of them are associated with several institutions. Supervision is given by the affiliate. The seven remaining programs do all their own training.

All but nine programs are supported by public funds. Seven of these charge tuition, and the other two are funded by the hospital's general income. Tuition charges range from $500 - $1400 a year. However, all of these tuition charged courses have funds available to underwrite the charge. Fifteen of the courses offer stipends; the amount is over $100 per month in ten of them.

There are 219 instructors reported teaching the licensed practical nurse courses in Massachusetts*

*(in 36 institutions answering this question)

One hundred and sixty-one are full time and fifty-seven are part time. Every institution has from one to five full time instructors. In addition, there are from three to ten part time instructors in twenty-four of the courses. Twelve courses have no part time instructors. Half of the 219 teachers have bachelor's degrees, the other half are equally divided between professional or diploma certification and persons with master's degrees, and a few with postgraduate college but no degree.

The standard length of the course is fifteen months, although there are a few exceptions. (Two are fourteen months and two are sixteen months). The general pattern is one-third classroom instruction and two-thirds clinical instruction, although the balance varies in half of the courses. Diplomas are awarded in thirty-two institutions, and six award certificates. Since 1941, when state licensing was initiated, 22,676 licenses have been issued in Massachusetts. This figure includes those employed from other states as well as some waivered licensing.

The curriculum for LPN training fall into three basic categories: social, behavioral and related foundation subjects; biological and related subjects; and nursing and related subjects. The topics include (1) psychology, human growth and development, personal and vocational adjustment; (2) anatomy, physiology, and microbiology, drugs and administration of basic medicine; (3) fundamentals of practical nursing - first aid, home nursing, home and hospital housekeeping, medical and surgical nursing, nutrition (diet therapy, maternal, child and infant care, care of the aged, chronically ill and mentally ill, rehabilitation nursing, specialties in the recovery room, central service

LICENSED PRACTICAL NURSE cont.

and emergency rooms.

Many of the schools affiliate with other hospitals for specialty training.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
BEVERLY:			
Beverly Hosp. Sch. of Pract. Nursing Herrick & Heather Sts., Beverly, 01915	Hospital Tuition	15 mos.	17.9yrs.-40yrs. Stand. educ. requirs.
BOSTON:			
Boston City Hospital Sch. of Pract. Nursing, 818 Harrison St., Boston	City	15 mos.	Standard requirements: 17½-50yrs. Phys. exam.
Shephard Gill Sch. Pract. Nursing 222 Newbury St., Boston (Affiliates) Bayside Nursing Home, 804 E. 7th St.S.Boston Robt. B. Brigham Hosp., 125 Parker Hill Ave. Mass. Gen. Hospital, Fruit St., Boston	City No tuition No stipend	15 mos.	H.S. grad. under 30. 10th gr. for over 30yrs. Test
Trade High School for Girls 56 The Fenway, Boston, 02115 (Affiliates) Boston City Hosp., 818 Harrison St., Bos. Boston Hosp. for Women, 221 Longwood Ave. Children's Medical Center, 1300 Longwood Mass. Gen. Hospital, Fruit St., Boston Peter Bent Brigham Hosp., 721 Huntington Ave.	Fed., St., City	15 mos.	Standard
BROCKTON:			
Brockton Vocational Sch. Pract. Nursing 50 Summer St., Brockton, 02402	Fed-MDTA Stipend	15 mos.	18-52yrs.(HS pref., 10th gr.acc. 25-50yrs. (8-9 gr.acc.over 50.)
CAMBRIDGE:			
Holy Ghost Hosp. Sch. Pract. Nursing 1575 Cambridge St., Cambridge, 02138	Hospital Tuition	15 mos. (65 wks.)	17½-40yrs.HS grad. or equiv. Science Test.
CHELSEA:			
Soldiers' Home Sch. Pract. Nursing Crest Ave., Chelsea, 02150	State Stipend	15 mos.	17½-48 yrs. Educ. Standard

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LICENSED PRACTICAL NURSE cont.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
DANVERS: Essex Agricu. & Technical Institute 562 Maple St.,Danvers (P.O.Hathorne,Mass.) (Affiliates) Salem Hospital, Highland Ave., Salem North Shore Babies & Children's Hosp. 57 Highland Ave., Salem, 01970 (pediatrics)	Fed. St.,County Stipend (Hospital) (Hospital)	15 mos. (62 wks.)	Standard
FALL RIVER Diman Vocational School 45 Morgan St., Fall River (Affiliates) St. Lukes Hosp., 101 Page St., New Bedf. Truesdale Hosp., 1820 Highland St.,Fall R. Lakeville State Hosp., Main St., Lakeville Union Hosp. in Fall River, Highland and New Boston Road, Fall River.	City No tuition residents Stipend in hospital	15 mos.	Standard
FITCHBURG: Burbank Hosp. Sch. of Pract. Nursing Nichols Rd., Fitchburg, 01420	Hospital Tuition	15 mos.	Standard
FOXBORO: Mass. Dept. Mental Health Sch.Pract.Nursing Foxboro State Hosp., Foxboro (Affiliates) Wrentham State School, Emerald St., Wrentham Goddard Memorial Hosp., 909 Summer, Stoughton	State Stipend	15 mos.	Standard
GARDNER: Gardner State Hospital, Gardner, 01440 (Affiliates) Henry Heywood Memorial Hosp., Gardner	State Stipend	15 mos.	18-50(HS under 30) 10th gr.(over 30)
GLOUCESTER: Addison Gilbert Hosp. Sch. for Pract. Nursing 298 Washington St., Gloucester, 01930	Hospital Stip. Tuition	15 mos. (64 wks.)	17½-40 yrs.

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LICENSED PRACTICAL NURSE cont.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
HAVERHILL:			
Haverhill Trade Sch. of Pract. Nursing 18 Wingate St., Haverhill (Affiliates) Hale Hospital, 40 Buttonwoods Ave., Hav. Pentucket Chronic Disease Hospital	Fed. MDTA	15 mos. (65 wks.)	Standard
HOLYOKE:			
Holyoke Trade High Sch.Pract.Nurs.Course 325 Pine St., Holyoke, 01040	Fed. MDTA	15 mos. (65 wks.)	Standard
HYANNIS:			
Cape Cod Hospital, 27 Park St., Hyannis 02601 (Affiliates) Lakeville Hospital, Lakeville (pediatric) Barnstable Visiting Nurse Assn.	Hospital Tuition	15 mos. (8 wks.) (4 days)	Standard
JAMAICA PLAIN:			
Lemuel Shattuck Hospital 170 Morton St., Jamaica Plain, 02130	State	15 mos.	Standard
LAWRENCE:			
Lawrence Vocational School, Leonard School Bldgs., 60 Allen St., Lawrence, 01841 (Affiliate) Bon Secours Hosp., 70 East., Methuen, 01844	State & Local	15 mos.	Standard
LEOMINSTER:			
Leominster Trade High School 305 Whitney St., Leominster (Affiliates) Leominster Hosp., Hospital Rd., Leom., 01453 Nashoba Community Hosp., Ayer, Mass. Fairlawn Nursing Home, 370 Erdy Dr., 01453	Fed. MDTA	15 mos. (63 wks.)	Standard
LOWELL:			
Lowell Trade High School, 43 French St. Lowell (Affiliate) St. John's Hosp., 14 Bartlett St., 01852	State & Local No tuition Stip. in hosp.	15 mos.	Standard
NORTH ADAMS:			
McCann Regional Vocational High School Hodges Crossroads, North Adams Aff: North Adams Hosp., Hospital Ave.01247 W. B. Plunkett Memorial Hosp., Adams,01220 Adams Nursing Home, Inc., 17 Comm.St.,Adams	State & Local No tuition	10 or 15 mos. (60 wks.)	Age 16½-45. Under30=H.S. grad. Over30=2yr. H.S. Test. Health. Character

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LICENSED PRACTICAL NURSE cont.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
NORTHAMPTON:			
Mass. Dept. Mental Health Sch. Pract. Nursing Pioneer Valley Div., Northampton State Hosp., Prince & West Sts. 01061	State Stipend	15 mos.	Standard
Smith's Vocational High School 80 Locust St., Northampton (Affiliates) Cooley Dickinson Hosp., 30 Locust St.,Northh. Northampton State Hosp., Prince & West,Northh. Hampshire County Sanitarium, Leeds	Fed.,St.,City No tuition	15 mos.	Standard
NORWOOD:			
Peabody Sch. for Girls Pract. Nurse Program Peabody Rd., Norwood 02062 (Affiliates) Norwood Hosp., 800 Washington St.,Norwood South Shore Hosp., So. Weymouth,02190	Town Stipend	15 mos. (52 wks.)	Standard
PITTSFIELD:			
Pittsfield Voc. H. S. Pract. Nurse Program 300 East St., Pittsfield (Affiliates) Pittsfield General Hosp., 725 North St., St. Lukes Hosp., 379 East St., Pittsfield	Fed.,City	15 mos.	Standard
PLYMOUTH			
Plymouth Vocational Sch. Pract. Nursing c/o Jordan Hospital, Plymouth, 02360 (Affiliates) Newfield Conv. Home, 19 Newfield St. Plym. Plymouth Community Nurses Assn.	Fed. MDTA Stipend	15 mos.	Standard
QUINCY:			
Project Able. Quincy Voc. Technical School 34 Coddington St., Quincy, 02169 (Affiliates - planned) Quincy City Hosp., 114 Whitwell St.,Quincy Wentworth Manor Nur. Home, 205 Elm St.,Quincy	City	-	Unspecified

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LICENSED PRACTICAL NURSE cont.

Institutions offering the course	Funding/Stipend	Length of course	Eligibility
SALEM:			
North Shore Babies & Children's Hospital Sch. Pract.Nursing, 57 Highland Ave.01970 Aff: Emerson Hosp., Old Rd., Concord,01742	Tuition	15 mos.	2yrs.college,math. sci. 17½ yrs. min. Test. Phys. exam.
SPRINGFIELD:			
Springfield Technical Institute 1300 State St., Springfield 01109 Aff: Shriner's Hosp. for Crippled Children 516 Carew St., Springfield, 01104; and other area hospitals(unspecified)	Fed.,St.,Local No tuition residents	15 mos.	H.S. grad: Test. Personal interview, Refs.
TAUNTON:			
Taunton Voc. High Sch. Pract. Nurses Progr. 25 N. Pleasant St., Taunton, 02780 Aff: Morton Hosp., 88 Washington St.,Taunton	Fed.,St.,Local No tuition	15 mos. (63 wks.)	Standard
TEWKSBURY:			
Tewksbury Hospital School Pract. Nursing East St., Tewksbury	State Stipend	15 mos.	Standard
WALPOLE:			
Pondville Hospital Sch. Pract. Nursing Box 111, Walpole, 02081 Aff: St. Lukes Hosp., 101 Page St., New Bedf. Mass. Hospital School, Canton	State	15 mos.	Standard
WALTHAM:			
Waltham Vocational High School, 100 Summer St. Aff: Waltham Hospital, Hope Ave., 02154	City No tuition	15 mos. (60 wks.)	Standard
WESTBOROUGH:			
Westborough State Hosp. Sch.Pract. Nursing Lyman St., Box 288, Westborough Aff: Marlborough Hosp., 57 Union St., Marlb.	State Stipend	15 mos. (65 wks.)	18-50 yrs. Educ. standard
WESTFIELD:			
Western Mass. Hosp. Sch.Pract. Nursing 91 E. Mountain Rd., Westfield, 01085	State Stipend	15 mos. (65 wks.)	Standard
WINTHROP:			
Winthrop Community Hosp. Sch.Pract. Nursing 25 Lincoln St., Winthrop, 02152 Aff: No. Shore Babies & Childr. Hosp.,Salem	Hospital funds No tuition but expenses	15 mos.	H.S. grad. Test.

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LICENSED PRACTICAL NURSE cont.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
WORCESTER:			
David Hale Fanning Trade High School 24 Chatham St., Worcester, 01608 (Affiliates) Harrington Memorial Hosp., Southbridge Rutland Heights Hosp., Rutland,01543 Clinton Hospital,20 Highland St., Clinton St. Vincent Hospital, 25 Winthrop, Worc. Worcester City Hosp., 26 Queen St., Worc. Memorial Hospital, 119 Belmont St., Worc. Worcester Hahnemann, 281 Lincoln, Worc. Providence House, 25 Winthrop St., Worc.	Fed.MDTA;State Local stipend for one MDTA section only	15 mos.	Standard
OTHER PRACTICAL NURSE TRAINING			
Fernald State School (waivered LPN course) 200 Trapelo Road, Waltham	Fed. NIMH & State	Inservice (6 hrs.)	Experienced attend. nurse for 12yrs.+

LPN SUPPLEMENTARY COURSES

Institutions offering the training	Funding/Stipend	Length of course	Eligibility
Paul A. Dever State School 1380 Bay St., Box 631, Taunton (Mental retardation course)	Fed. grant Salary	6 wks.	LPN employed at the school
David Hale Fanning Trade High School 24 Chatham St., Worcester (Administration of Common Medicines)	Fed. MDTA	84 hrs.	LPN
Medfield State Hospital Hospital Rd., Harding 02052 (psychiatric nursing)	Fed. NIMH	Inservice (30 hrs.)	LPN employed at the hospital
Sturdy Memorial Hospital 211 Park St., Attleboro (Refresher pharmacology course)	Hospital	73 hrs.	LPN employed at the hospital
Veterans Administration Hospital 200 Springs Road, Bedford, 01730	Federal	8 wks. (75 hrs.)	LPN employed at VA hospital

MATRON

A matron acts as a supervisor on a psychiatric ward in a hospital or state school. She has administrative charge of the mental health aides or nurse aides on the ward. Fernald State School in Waltham offers a course to train matrons for its institution. An applicant must have had previous experience as a mental health aide.

The matrons were trained in a course offered in 1966, funded by the National Institute of Mental Health.

The trainee receives a stipend of $1.40 an hour. The course is sixty hours with ten hours classroom instruction and fifty hours on-the-job training.

The curriculum was designed by the director of nursing and the director of inservice education. One full time professional nurse instructs the trainee. A certificate is awarded upon completion of the training.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Fernald State School 200 Trapelo Road, Waltham	Fed. NIMH & State	60 hrs.	Prev. experience as mental health aide

MEDICAL ASSISTANT

The medical assistant is trained to assist the physician in many phases of his work, combining the duties of the medical secretary and the medical laboratory technician. She helps to prepare patients for the doctor, takes temperatures, etc., and performs routine laboratory tests.

Training for medical assistants is offered by two vocational schools, two technical institutes and a junior college. Springfield Technical Institute offered the first course in 1949. The next program began in 1955 at Carnegie Institute in Boston, followed by courses in 1957 and 1964. One vocational school plans a training program for 1968. Approximately 750 students have been trained since 1949.

The courses at one technical school and both vocational schools are ten months, half classroom and half clinical or on-the-job instruction. Each is affiliated with a local hospital or two. The Carnegie Institute course is eleven months, the course at the junior college is two years with all but three weeks spent in the classroom. The two latter courses differ from medical secretary training only in that shorthand is replaced by X-ray training at Carnegie and by an elective at Fisher (which they also conduct).

The Fisher Junior College prefers students with a college preparatory high school course, and offers upon completion an associate science degree. The other institutions require high school diplomas (sometimes aptitude tests), and award certificates upon graduation.

Tuition is free at the vocational schools and one of the technical schools. One program offers a stipend of $1.40 an hour. The other technical institute charges $1595, and Fisher Junior College charges $4800 for two years.

Curricula are designed by the directors and the faculty of the schools to include instruction in medical assisting skills (the doctor's laboratory, assistance with patient physical examinations, secretarial aspects of the job and records); in science studies (anatomy, physiology, bacteriology, psychology, common drugs); and in related subjects (medical terminology, business English, growth and development, nutrition, hygiene). The junior college has more liberal arts courses, such as English composition, sociology, economics, and speech.

The two vocational schools each have one full time instructor, one with an MA and one with a bachelor's degree. Springfield Institute has one full time and five part time faculty, all with masters degrees. The junior college has twenty full time and eleven part time teachers with degrees ranging from bachelors to doctorate degrees.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Carnegie Institute 65 Anderson St., Boston 02114	Institute Tuition	10 mos. 30 hr. wk.	
Diman Vocational School 45 Morgan St., Fall River, Mass.	Local	10 mos. plnnd. for 9-68	H.S. graduate
Fisher Junior College 118 Beacon St., Boston	College Tuition	2 yrs. assoc. degree	H.S. graduate
Chas. H. McCann Regional Voc. High School Hodges Crossroads, North Adams, 01247 (Affiliates) North Adams Hosp., Hospital Ave. N. Adams W. B. Plunkett Memorial Hosp., Adams, 01220	Fed.,St.,Local No tuition for residents Mass. Stipend at hospital	10 mos. (1200 hrs.)	H.S. graduate Max. age 40. Test
Springfield Technical Institute 1300 State St., Springfield, 01109 (Affiliates) Local cooperating hospitals	Fed.,St.,Local No tuition Mass. resident	10 mos. (1200 hrs.)	H. S. graduate

MEDICAL LABORATORY ASSISTANT

The medical laboratory assistant performs a wide variety of medical laboratory procedures for use in the treatment and diagnosis of disease. He assists in all departments: bacteriology, hematology, histology, chemistry, parisitology, urology, blood bank and serology, under the supervision of the medical technologist and pathologists. He usually works in hospitals but may also work in doctor's laboratores or clinic laboratories.

Training for medical laboratory assistants in Massachusetts is principally offered in hospitals, although three technical institutes, a junior college, and a university extension division also conduct courses. The first formal training for medical laboratory assistants was offered by the old Boston Dispensary in 1930. It conducted continuous training programs until 1962 when Northeastern University continued the job. In 1955, 1956, and 1957, three other hospitals opened courses. A technical school started training in 1962 and another opened a course in 1967. Two additional hospitals also opened courses in the 1960s.

Between 300 and 500 medical laboratory assistants have been graduated from these twelve institutions since 1930. The class size ranges from three to nine students. All the institutions conduct training programs once a year.

Most of the courses extend from twelve to fifteen months. Clinical experience predominates, occupying from two thirds to four fifths of the course. At the technical institutes, however, classroom training takes three fourths of the time.

All institutions require a high school diploma and many give tests in addition, or specify that the students must have taken high school chemistry or science and mathematics. One program accepts only girls. Each institution grants a certificate or diploma which leads to licensure. Bay Path Junior College will also give an associate science degree. The Board of Certification of Laboratory

MEDICAL LABORATORY ASSISTANT cont.

Assistants of the American Society of Clinical Pathologists (ASCP) has approved at least six of these programs.

Two institutions listed the Board of Certified Laboratory Assistants, ASCP, as the basis of their course. Others stated that the course was planned by the pathologist, the director of the laboratory, the chief registered technologist with the pathologist, the pathologist in cooperation with the chief medical technologist and the heads of the departments, or the faculty with an advisory committee and current specialists.

The medical laboratory assistant learns laboratory techniques in such fields as urology, hematology, biochemistry, electrocardiology, and basic introduction to bloodbanking, seriology and microbiology. He learns care of equipment and laboratory safety. Medical ethics and conduct are part of the curriculum as well.

Tuition is free at most institutions, and two offer stipends in addition. One hospital has a charge of up to $150 a year, and the university extension course currently offered has not yet decided about a fee.

The faculty, for the most part, devotes full time to instruction, its size varying from one full time instructor to twelve full time plus one part time. The degree level of the faculty members varies. There are doctors teaching at most institutions. The technical institute class has as faculty one full time diploma graduate, but it's affiliation faculty for clinical experience is not listed.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Baypath Junior College Longmeadow, 01106	College Tuition	2yrs. assoc.deg.	H.S. grad. Coll. ent. exam.
Beverly Hosp. Sch. Certified Lab Assistants Herrick & Heather St., Beverly, 01915	Hospital Stipend	12 mos.	H.S. grad. with chemistry
Blue Hills Regional Voc. Tech. School 100 Randolph St., Canton, 02021 Affiliates) Hospital clinical laboratories	Fed.,St., Local	12 mos.	H.S. grad. with chemistry, math
*Lynn Hospital,212 Boston St., Lynn	Hospital	15 mos.	H.S. + science and math
New England Deaconess Hospital 185 Pilgrim Rd., Boston, 02215	Hospital Salary	12 mos.	H.S. grad. or over Tests.
New England Hospital Columbus Ave., Roxbury	Hospital	16 mos.	H.S. graduate
Northeastern Univ. Center for Continuing Educ. 360 Huntington Ave., Boston, 02115 (Affiliates of Northeastern are listed on the next page)	Tuition	15 mos.	H.S. grad. with chemistry, math Tests.

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MEDICAL LABORATORY ASSISTANT cont,

Institutions offering the training	Funding/Stipend	Length of course	Eligibility
(Affiliates of Northeastern University, Boston)			
Boston: Boston Dispensary of N. Eng.Med.Center, 171 Harrison Ave., Boston,02111			
Boston Lying In Hosp., 221 Longwood Ave., Boston			
Cambridge City Hospital, 1493 Cambridge St., Cambridge 02139			
Lemuel Shattuck Hospital, 170 Morton St., Jamaica Plain, 02130			
Mount Auburn Hospital, 330 Mt. Auburn St., Cambridge			
St. Elizabeth's Hospital, 706 Cambridge St., Brighton, 02135			
St. Margaret's Hospital, 90 Cushing Ave., Dorchester, 02125			
North- Choate Memorial Hospital, 21 Warren Ave., Woburn, 01801			
west: Emerson Hospital, Old Road, Concord, 01742			
Lawrence Memorial Hospital of Medford, 170 Governors Ave., Medford, 02155			
Leominster Hospital, Hospital Rd., Leominster, 01453			
Nashoba Community Hospital, 15 Winthrop Ave., Ayer, 01432			
Symmes Hospital, Sumner St., Arlington, 02174			
Veterans Administration Hospital, Bedford			
Winchester Hospital, 41 Highland Ave., Winchester, 01890			
North: Hunt Memorial Hospital, Lindall St., Danvers, 01923			
Saugus General Hospital, 18 Chestnut St., East Saugus			
Union Hospital, 500 Lynnfield St., Lynn, 01904			
Whidden Memorial Hospital, 103 Garland St., Everett, 02149			
South- Brockton Hospital, 680 Center St., Brockton			
east Cape Cod Hospital, 27 Park St., Hyannis			
Falmouth Hospital, Falmouth			
Goddard Memorial Hospital, 909 Sumner St., Stoughton, 02072			
Morton Hospital, 88 Washington St., Taunton, 02780			
West: Marlborough Hospital, 57 Union St., Marlborough			
Project Able. Quincy Voc. & Tech. High School 34 Coddington St., Quincy, 02164	Fed.,Local	Planned	H.S.grad.with chem.
Springfield Technical Institute 1300 State St., Springfield, 01109	Fed.,St.,Local No tuit. res.	12 mos.	H.S.grad. Test
St. John's Hospital Sch. of Lab. Assistants 14 Bartlett St., Lowell, 01852	Hospital Stipend	15 mos.	H.S. grad.Upper1/3 Loc.res.pref.Fem.
St. Joseph's Hospital Laboratory 220 Pawtucket St., Lowell, 01854	Hospital Tuition	1 yr.	H.S. grad.
Union Hospital in Fall River Highland Ave.at New Boston Rd., Fall River,02720	Hospital Stipend	1 yr.	H.S. grad.

MEDICAL PHOTOGRAPHER

A medical photographer (or photographer technician) takes photographs of printed materials, drawings, x-rays, and slides. He is expected to photograph medical situations - the newborn, parts of the body, certain disease situations, cadavers, specimens; and to handle microscopic photography. His job also includes processing the negatives and photographs, preparing slides and other transparencies, organizing layouts for visual presentation and publication, and filing and indexing his library.

Training for a photographic technician is given at Franklin Institute of Boston, and a course in biomedical photography is given at Beth Israel Hospital.

Since 1950, the Franklin Institute has been offering annual day and evening courses. Beth Israel's is given biannually. Four medical photographers have been trained at Beth Israel School of Medical Photography since its inception in 1964. It is difficult to estimate how many Franklin graduates became "medical" photographers.

Tuition at Beth Israel is $300 a year; no stipends or scholarships are available. Franklin Institute tuition is $800 for day courses and $100 for evening courses. Both day and evening programs have an additional $50 laboratory fee.

Beth Israel's training is two years, twenty percent classroom instruction and eighty percent clinical experience. The program is affiliated with the hospital pathology department under the chief histology technician. Franklin's program is seventy percent classroom instruction and thirty percent clinical experience.

An applicant to Beth Israel must be seventeen years old, have a high school education, and a basic knowledge of photography. Franklin Institute requires a high school diploma with one year each of mathematics and science and three years of English.

The curriculum at Beth Israel is designed by a registered biomedical photographer and at Franklin Institute by the director and his photography staff. Both programs give a certificate which may lead to professional registration.

The hospital curriculum consists of courses in basic photography; copying of printed materials, drawings and x-rays; light sources and lighting; invisible radiation and photography of instruments and glassware; gross specimen and cadaver photography and the preparation and projection of transparencies; biomedical motion pictures and publication photography for education and research; photomicrography and macrophotography (use of miscroscope); dermatology; microbiology and opthamology; oral and dental, pediatric, endoscopic and obstetric photography; photography in the physicians' office and the filing and indexing of medical photos; newborn photography and biomedical photography. During the intern period the students gain experience in pathology, surgery, and out-patient department clinics.

Franklin Institute has a general photography course for two terms where students receive instruction in copying, printing, enlarging, photomicrography and photomacrography, infra-red and ultra violet techniques. A two year course in color photography covers processes in scientific,

MEDICAL PHOTOGRAPHER cont.

editorial and advertising work.

There are two full time and two part time instructors for these courses at Franklin Institute and a staff of two part time hospital professional personnel at Beth Israel. In both cases, these are professional technicians with training and experience after their high school education.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Beth Israel Hosp. Sch. of Medical Photography 330 Brookline Ave., Boston, 02215 (Biomedical Photography)	Hospital Tuition	2 yrs.	Basic knowledge of photography
Franklin Institute of Boston 41 Berkeley St., Boston, 02116 (Applied & Industrial Photography, includes infrared and ultra violet)	Institute Tuition	1 yr., day 1 yr., even.	H.S.grad. with math, science
*Harvard Medical School 25 Shattuck St., Boston	-	Inservice	H.S.grad with some bckgrnd in photog.

MEDICAL RECORD TECHNICIAN

A medical record technician assists the medical record librarian in keeping medical records and hospital statistics. He is also trained to assist in transcribing medical notes and discharge summaries.

The first training for medical record technicians began in 1954 at St. Joseph's Hospital School in Lowell. Massachusetts General Hospital (MGH) has had inservice training for transcribing machine operators since 1956. During the 1960s, one community college, a private hospital, and the Work Training and Experience Training program of the Lowell Board of Public Welfare, began their training. One hundred and fifty students have been trained since the first program. Class sizes range from four to twelve students a year.

The New England Medical Center Hospitals and the Lowell Board of Public Welfare have six month programs. St. Joseph's in Lowell trains for eleven months and MGH has a twelve month program. The training at the Cape Cod Community College consists of one forty-two hour course plus a short on-the-job orientation afterwards to qualify as technicians. The hospitals spend far more time in clinical experience than in the classroom except for MGH which has half classroom and half on-the-job training.

All the institutions require a high school diploma except the Lowell Board of Public Welfare, which accepts low income persons with no educational specifications. Three programs expect typing ability and one requires college entrance exams. Upon completion of the course, the community college awards an associate degree and MGH, Lowell Board of Public Welfare, and St. Joseph's Hospital School offer certificates. St. Joseph's is the only school in Massachusetts reporting accreditization by

the Council on Medical Education and Hospitals of the American Medical Association. Its graduates are eligible to take an exam to become accredited medical record technicians.

The curriculum is designed by the American Medical Association and the American Association of Medical Record Technicians at St. Joseph's, by an instructor at the New England Medical Center, by a medical record librarian at MGH, and by the department of secretarial science at the community college. A typical hospital course for medical record technicians may include topics such as: history of medicine; hospitals and medical record science; medical terminology; a medical records lecture and laboratory course dealing with usage of medical records, indices, statistics, assembling of charts; ethics - treating aspects of the confidential character of the hospital medical record.

Tuition is free at the medical center, where a stipend of $62 a week is given, and at MGH where the trainees receive a salary during training. The community college charges $100 a year. The Lowell Board of Public Welfare gives a stipend of $10 a week plus baby sitters, books, uniforms and transportation, funded by the Office of Economic Opportunity.

St. Joseph's Hospital School reports twenty-two full time and part time faculty members whose degrees range from professional certification to MDs. New England Medical Center has one full time and two part time instructors. The MGH program is taught by the supervisor of the transcription section, with the guidance of the medical record librarian. Both hold college degrees.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Cape Cod Community College 367 Main St., Hyannis, 02601 (Medical Terminology & Case Writing)	State	1 semester, part of assoc. degree	H.S.grad. college entrance tests
*Lowell Bd. of Public Welfare.Work Exp.& Trnng. 100 Merrimack St., Lowell, 01852 (Affiliate) St. Joseph's Hosp., 220 Pawtucket St.,Lowell, 01854	Fed.OEO	6 mos. (22 wks.)	Low income. Welfare recipient,A.D.C.
Massachusetts General Hospital Fruit St., Boston, 02114	Hospital Salary	12 mos.	H.S. grad. Typing
New England Medical Cen. Hosp. Med.Rec.Dept. 171 Harrison Ave., Boston 02111	Hospital Stipend	6 mos.	H.S. grad.Some typing Good grade English
St. Joseph's Hosp.Sch.for Med.Record Technicians 220 Pawtucket St., Lowell, 01854 (Affiliate) St. Joseph's Hospital,Providence, R.I. Boston Lying-In, Boston	Hospital Tuition	11 mos.	H.S. grad. 17 yrs. min. Typing

MEDICAL SECRETARY

A medical secretary is trained to assist the doctor in his office, the hospital and the laboratory. She is also trained as a receptionist and is expected to have some understanding of clinical diagnosis techniques. The medical secretary must have a working knowledge of medical terms as well as good secretarial skills.

In Massachusetts, training for medical secretaries is conducted entirely in educational institutions: nine junior colleges, two four-year colleges, and a technical institute. The first training was given by Lasell Junior College in 1940, followed by Fisher Junior College in 1943. The others opened courses in the 1950s and 1960s. Over 1800 medical secretaries have been trained since 1940; 700 of them at Fisher Junior College and 500 at Lasell Junior College. Class size ranges from seven to twenty-five a year in the various institutions.

All programs are two year courses, with the exception of Carnegie Institute where the program is eleven months, and at the Cape Cod Community College where it is one semester. All training takes place in the classroom. Fisher Junior College is the only institution to affiliate. Toward the end of its two-year program, the students spend three weeks in hospitals in the Boston area.

A high school diploma is required by all programs. Some programs specify a strong science background, while others require a well-rounded college preparatory curriculum. The colleges award an associate science degree (Cape Cod Community College only in part). Carnegie Institute gives a certificate.

Curricula are designed in the institutions, either by the secretarial or business departments, or by the administrative office. The faculties include from one to nine full time members, mostly with masters degrees, a few with baccalaureate and doctoral degrees. Students attend classes in English and other liberal arts electives at most the institutions. Other topics included in most the curricula are: accounting, shorthand, typing, business correspondence, medical terminology, anatomy, physiology, bacteriology, clinical biology.

Tuition charges range from $100 a year at a community college to $2400 a year at a private junior college.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Atlantic Union College South Lancaster, 01561	College (4 yr.) Tuition	2 yrs.	H.S.grad. College entrance
Bay Path Junior College, Longmeadow (incl.med.lab.techniques course)	College Tuition	2 yrs.	H.S. grad. College entrance
Cape Cod Community College 367 Main St., Hyannis, 02601	State Tuition	2 yrs.	H.S. grad. College entrance
Cardinal Cushing College Brookline	College (4 yr.) Tuition	2 yrs.	H.S. grad. College entrance

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Institution offering the training	Funding/Stipend	Length of course	Eligibility
Carnegie Institute 65 Anderson St., Boston, 02114	Institute Tuition	11 mos. (30 hrs./wk.)	
Chamberlayne Junior College 128 Commonwealth Ave., Boston	College Tuition	2 yrs.	H.S.grad.Science
Dean Junior College 99 Main St., Franklin, 02038	College Tuition	2 yrs.	H.S.grad.Science
Endicott Junior College Beverly, Mass.	College Tuition	2 yrs.	H.S. graduate
Fisher Junior College 118 Beacon St., Boston	College Tuition	2 yrs.	H.S.grad.College preparatory course
Holyoke Community College 541 South St., Holyoke, 01040	State Tuition	2 yrs.	H.S.grad. or equiv.
Lasell Junior College Auburndale, Mass. 02166	College Tuition	2 yrs.	H.S.grad.College admission scores
Quincy Junior College 34 Coddington St., Quincy, 02169	City Tuition	2 yrs.	H.S. grad.

MENTAL HEALTH AIDE

Mental health aides come from two types of backgrounds. The aide may be licensed practical nurse with special training in psychiatric nursing to enable her to assume a more effective role in the care of the mentally ill or mentally retarded; or the aide may have no previous nursing background and work under a professional nurse, a licensed practical nurse, or social worker. In both cases, the aide assists in therapy, maintains equipment, observes and reports on progress of the patient through a one-to-one relationship with him.

Training is offered in Massachusetts by seven hospitals, two state schools, one mental health center, a counseling training center, and two community service agencies. Over 2,750 mental health aides have been trained in the state since 1947 when Northampton State Hospital began its training. Class sizes range from fifteen to twenty-six trainees, and the courses are given several times a year in most institutions offering programs.

The length of the courses varies from six weeks of basic training with on-going instruction to courses of one year. Four programs are less than sixty hours, five range from six to sixteen weeks, and four are from ten to twelve months. The bulk of the student's time is spent in on-the-job training. Classroom instruction is a little less than half of the entire training period in most cases. Tuition is free at all institutions and two of the courses offer stipends.

MENTAL HEALTH AIDE cont.

Except for programs set up for licensed practical nurse training, the eligibility requirements are minimal. The age requirement generally is eighteen years. One course is given to train those of low income. In most instances, however, the qualities expected are stability, responsibility, and basic intelligence.

Curriculum is designed by the instructors and education committees of the hospitals in three cases; two programs are planned by associate chiefs of the nursing division, two by the inservice program director, one by the federal Bureau of Medicine and Surgery, and one by the hospital social work staff.

Most courses have full time instructors, but two programs have only part time instructors. Full time staffs range from one to three instructors, and there may be from five to twelve part time instructors in addition. Degrees vary: five of the institutions have an instructor with a master's degree and each program has at least one college graduate; others have professional certification. Only one program includes a doctor on the instructing staff.

The curriculum of one twelve-week basic training program includes: (1) Introduction to mental illness and the care of psychiatric patients, hospital ethics, patient hygiene and safety, hospital orientation. (2) Body mechanics and practical experience using simple recording devices. (3) Getting to know a specific patient, relationship, interaction, method of reporting and recording. (4) Patient's environment and the philosophy of rehabilitation. (5) Emergencies - brain syndromes, convulsions, diabetes. Fears. (6) Care of the physically infirm. (7) The ward, patients withdrawn, suspicious, under tranquilizers, newly admitted, depressed. Selection of a new patient for aide relationship. (8) Physical medicine and rehabilitation services: the therapies - occupational, manual arts, corrective, recreational, educational, physiotherapy. (9) Special problems and nursing care: the neurotic, types of discharge, personality disorder, the alcoholic, suicide, patient privileges. (10) Fire, safety, emergencies. Incentives. (11) Trainee evaluation of experience. (12) Team nursing. Review of principles of rehabilitation. Exams.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Attleboro Area Mental Health Center 219 Park St., Attleboro	Center No charge	1 acad. yr. (1 hr.per wk.)	Volunteer clinical aide(college stud.)
Belchertown State School (Retarded) Box 486, State St., Belchertown,01007	State Salary	6 wks. (240 hrs.) in-service	18 yrs. 1 yr. H.S.
Paul A. Dever State School Box 631, 1380 Bay St., Taunton,02781	Federal Salary	6 wks.	Employed at school
Medfield State Hospital Hospital Rd., Harding, 02052	NIMH & State	Inservice 30 hrs./yr.	

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Institution offering the training	Funding/Stipend	Length of course	Eligibility
Metropolitan State Hospital 475 Trapelo Rd., Waltham, 02154	Federal Salary	1 wk.plus on-going 3 hrs. wk.	Employed at hospital
Naval Hospital 1 Broadway St., Chelsea, 02150	Federal	16 wks.	In the service. Tests
Northampton State Hospital Box 351, Northampton	State	Inservice	Employed at hospital
Self Help, Inc. 6 Allendale Ave., Brockton	Fed. OEO	12 mos.-4 wks. basic plus ongoing	Low income. Adult - 22 yrs. Welfare recipient
Springfield Bd. of Public Welfare 756-760 State St., Springfield,01109	Fed.OEO Stipend		
Springfield Counseling Training Center 759 Chestnut St., Springfield	State & Private	10 mos. 5 hrs./wk.	18 yrs. min.
Veterans Administration Hospital 200 Springs Rd., Bedford	Fed.VA Salary	4 wks.(40 hrs.)	Already a nurse aide or nursing asst.GS3
Veterans Administration Hospital Belmont St., Brockton, 02401 (Basic Nursing for Nursing Assts.)	Fed.VA Salary	12 wks. (160 hrs.)	18 yrs. min.
(Advanced Psychiatric Nursing for GS3)	Fed.VA Salary	40 hrs. plus ongoing	1 yr. exp. as GS2
(Advanced Psychiatric Nursing for GS4)	Fed.VA Salary	60 hrs. plus ongoing	2 yrs. as nursing asst. G3
(Orientation Program for NY Corps etc.)	Fed.VA Salary	13 hrs. basic plus ongoing	Neighborhood Youth Corps or Youth Opportun:
Veterans Administration Hospital Berkshire Trail, Northampton, 01060	Fed. VA Salary	1 yr.	18 yrs. min. Literate

NEIGHBORHOOD AIDE

The neighborhood aide serves as a liaison between community service agencies and the families in the community. He or she informs people of existing programs and services in the neighborhood which are tackling the problems of social welfare, housing, health and finances. In a neighborhood center he assists the teachers and nurses.

There are seven community agencies training neighborhood aides in the Boston area. There is also a program in a mental health association on the North Shore and one in Worcester. Two began training in 1965 and the rest in 1966 and 1967. Within this short period over 155 neighborhood aides have been trained.

The approach to training varies in the different agencies. The course lengths range from one week (twenty-eight hours), fifty percent classroom instruction and fifty percent field experience, - to ten weeks, fifteen percent classroom, seventy-five percent field experience and ten percent on-the-job training. Most of the agencies continue the training with inservice and ongoing instruction in the form of group seminars and individual meetings with supervisors. Two of the programs are entirely on-the-job training.

The training programs encourage low income applicants, preferably from the neighborhood in which they will be working. Only one program requires a high school diploma for admission. One children's center gives preference to mothers of children in the program. Two of the courses offer certificates after training is completed.

All but one of the agencies offer stipends, which range from $10 a week to $2 an hour (for on-the-job training). The inservice training program that requires a high school graduate gives a salary of $5200-$6000 a year. Six of the program stipends were funded by the Office of Economic Opportunity, one by the Boston Redevelopment Authority, and one by United South End Settlements. The mental health association supplied its own funds.

One five-day course curriculum consists of: lectures and discussions on child growth and development, the team and its inter-relationships, confidentiality; a demonstration of art and music, parental involvement, curriculum and scheduling; and two films on kindergarten and nursery schools.

The agencies' directors and/or administrative staffs design the course training in all but two cases, where the program was designed by the family worker. Teaching staffs consist of doctors, social workers, home economists, and other consultants. The largest staff is two full time home economists and thirteen part time assistants; the smallest is one full time doctor and two part time teachers with masters' degrees.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Harriet Tubman House (United South End Settlements) 25 Holyoke St., Boston	Fed.&Priv. Salary	On-the-job (200 hours)	Resident in poverty area. Low income
Head Start Developm. Progr. Central Congregational Church, 6 Institute Rd.,Worcester	Fed.OEO&Priv. Stipend	8 months ongoing after 1 wk.basic	Mothers of children in program get pref.

continued on next page.

NEIGHBORHOOD AIDE cont.

Institutions offering the training	Funding/Stipend	Length of course	Eligibility
John F. Kennedy Family Service Center, Inc. 27 Winthrop & 53 Tufts St., Charlestown	Fed.OEO Salary	7 days(4hrs.day) plus ongoing	Mature adult pref.exper. w.elderly. Low income
Mental Health Assn. of the North Shore 1 Cambridge St., Salem, 01970	Assn. funds No stipend	10 wks.	Referred by Welfare Dept. Anti-pov.program
Quincy Community Action Org., Inc. 77 Parkingway, Quincy, 02160	Fed.OEO Salary	1 mnth(4hrs.day) + ongoing	Welfare recipient
Roxbury Multi-Service Center 317 Blue Hill Ave., Roxbury	Fed.OEO&Agency Salary	-	-
Women's Educ. & Industr.UnionSpec.Serv.Dept. 264 Boylston St., Boston	Fed.OEO Stipend	8 wks.	Women from neighborhood Pers. qualifications
South End House. Neighborhood Services 48 Rutland St., Boston, 02118	Fed.OEO.City Priv/Stipend	5 mos. inservice	Welfare recipient Pers. qualifications
South End Neighborhood Action Program (SNAP) 109 E. Brookline(Hdq)& 760-A Tremont St.,Bos.	Fed.OEO Salary	1 wk.+ongoing.Wkly, bi-wkly. or mnthly.	Over 8th grade. Low income

NURSE AIDE

The duties of the trained nurse aide are shaped by the needs of the hospital or medical institution. Increasingly, the nurse aide is used for supervised patient care.

Eighty-two institutions in Massachusetts report training for nurse aides. (Fifteen of these reported after the survey was completed, all of them in the Boston or Greater Boston area. The late reported are listed in the inventory following but marked with an asterisk to differentiate them from those on which the statistics are based and the generalization are made in the text).

This text describes sixty-seven nurse aide courses. Twenty-nine of them are in the Boston or Greater Boston area. The other sections of the state, northeast, southeast, central, and west, each have from eight to ten courses each.

General hospitals give over half the training courses and nursing homes give another twenty; seven are sponsored by boards of public welfare, and the remaining four are given by: a mental hospital, a college, a high school and three post graduate high school technical institutes.

Admission requirements are not primarily dependent on specific levels of formal education. Over half the courses require appropriate personality traits or experience in the field. Five of these programs also stipulate low income as a requirement. Less than half of the remaining programs (fourteen) require high school diplomas; and seven specify from eight to ten years of education.

NURSE AIDE cont.

Thirty-two percent of the courses train nurse aides to work in their own institutions; the remainder offer training for local area employment, regional and nationwide employment. Fifteen of the programs have training affiliations. Ten of these affiliate with only one institution and the other five affiliate with several. Supervision is generally conducted by the affiliate.

The first formal nurse aide course was started in the 1940s by Emerson Hospital in Concord. By 1960, thirteen more courses were established. It was, however, in the 1960s that the training gained its greatest impetus when forty-five new programs began (thirty-three of them started in 1966 and 1967). Nine programs did not specify when they began.

A total of 5,160 nurse aides were reported trained since 1940 by fifty-two of the institutions. This is a minimum figure due to the large number of programs which did not specify. Those that did report said that they have trained about 1,600 each year for the last three years. Most of the courses specifying, say they train between one to twenty students each year (twenty-five courses reporting). Twelve programs train between twenty-one and forty aides each year; another eight institutions report they each train between forty and eighty annually. Many did not specify their annual total.

Half of the programs are funded only by the general income of the institutions which sponsor them. The other half of the courses receive federal, state, and local funds. Of these, nineteen courses are wholly federally funded (eight by the Office of Economic Opportunity, five by the Manpower Development Training Act, four by the Department of Labor, two did not specify which federal agency); the rest are supported by combinations of federal, state, and local monies.

Stipends ranging from $40 to $300 a month are given by fifty-five institutions. Five courses have a tuition fee; three do not specify the tuition charge; the fourth states $200 and the fifth, under $20.

The lengths of courses vary from one week to six months. Typically, the course is from four to seven weeks (42 percent report this). 25 percent of the programs are from one to three weeks, 21 percent from eight to eleven weeks, 6 percent from twelve to fifteen weeks, and another 6 percent take six months.

All but two of the courses have formal classroom instruction, usually from twenty-five to fifty percent of the time, and the balance in clinical experience. One course is 100% classroom instruction. The two courses with no classroom training have on-the-job instruction. The clinical instruction reported is, in many instances, on-the-job instruction.

The curricula designs for the fifty-seven nurse aide courses reporting, were developed by hospital or nursing home staffs in thirty-four of the courses; by professional associations for nine courses; by committees of the educational institution conducting the training in two instances; by a state or local committee in two other cases. The other nine courses were designed by a combination of one or more of each of the above working together.

NURSE AIDE cont.

Most of the nurse aide courses have no professional or state certification and the training varies with the guidelines used to design the curricula. Certificates from the training institution are awarded by most programs; some award diplomas, and a few give caps. Eight courses report no specific credential award.

Fifty-four institutions report a total of 145 instructors for nurse aide courses. Seventy-nine are full-time and sixty-six are part-time. There are usually from one to four full-time instructors on a staff, with either no part-time or one additional part-time person. Sixty percent of the instructors are registered nurses and twenty-five percent have bachelor of science degrees. There are three doctors reported as instructors.

The curriculum for one nurse aide program consists of courses in: hospital ethics; a safety program; general nursing - principles of medical asepsis, bedmaking, hospital housekeeping, personal hygiene, bathing the patients, shampooing, how to take temperature and pulse; food service; body mechanics and lifting. In advanced training, the aide may learn how to assist in a physical examination, the application of heat and cold, care of the acutely ill, emergency care, and care of the dying.

Institution Offering the Training	Funding/Stipend	Length of Course	Eligibility
ARLINGTON:			
Symmes Hospital, Arlington Arlington, 02174	Fed. Dept. Labor, No stipend	5 wks.(30 hrs. wk.)	No age limits. Pref. H.S. educ.
ATTLEBORO:			
Sturdy Memorial Hospital 211 Park St., Attleboro, 02703	Hospital	4 wks. (200 hrs.+)	21 yrs. min. Pref. mature H.S. or equiv.
BOSTON:			
Bayside Nursing Home 804 East 7th St., South Boston, 02127	Home Salary	30 hrs. + service	Literate
Boston City Hospital 818 Harrison Ave., Boston	Fed. MDTA Stipend	5 day (20 hrs.)	Mature. Personal interview
Boston Hospital for Women 221 Longwood Ave., Boston, 02115	Hospital Stipend	1 month	Pref. H.S. grad.
* Boston Training Institute 59 Temple Place, Boston	Tuition	10 weeks	
Carney Hospital 2100 Dorchester Ave., Boston, 02124	Hospital Stipend	3 wks. (5 hrs. day)	16-65 yrs. Pers. interview
Hebrew Rehabilit. Center for the Aged 1200 Center St., Roslindale, 02131	Fed. Dept. Labor 6 wks. Stipend		Not established

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NURSE AIDE cont.

Institution Offering the Training	Funding/Stipend	Length of Course	Eligibility
BOSTON cont.			
*Joseph P. Kennedy Mem. Hosp. for Childr. 30 Warren Ave., Brighton, 02135	Hospital Stipend	10 wks. 15 hrs.	16 yrs. of age
Linda Richards House Nursing Home 637 Washington St., Dorchester, 02124	Home -	2-3 wks. Planned	Mature. Literate Personal qualif.
Marian Manor 40 Old Harbor St., South Boston, 02127	Home Salary	15-16 hrs. On-going	Employed as nurse aide
Mary Murphy Nursing Home 70 Rockview St., Jamaica Plain (Affiliate) Boston Welfare Dept.	Fed. OEO Stipend	9 wks. (225 hrs.)	Welfare recipients
Massachusetts Eye & Ear Infirmary 243 Charles St., Boston, 02114	Infirmary Salary	3 wks. orientation	Prefer H.S. 2 yrs. HS acceptable
New England Deaconess Hospital 185 Pilgrim Rd., Boston, 02215	Hospital Salary	4 wks.	H.S. grad. preferred
*New England Medical Center Hospitals 171 Harrison Ave., Boston, 02111	Hospital Stipend	9 wks.	H.S. grad. prefer-preferred
Peter Bent Brigham Hospital 721 Huntington Ave., Boston, 02115	Hospital -	3 wks.	18 yrs. min. 8th gr. or over desired
Town House Convalescent Home 214 Harvard St., Dorchester, 02124	Home Salary	12-15 hrs. on-going. 1 dy wk.	Employee
*U.S. Public Health Service Hospital 77 Warren St., Brighton, 02135	Fed. Hosp. Stipend	200 hrs.	18 yrs. phys. exam references
*University Hospital 750 Harrison Ave., Boston, 02118	Hospital Stipend	40-160 hrs.	
Veterans Administration Hospital 150 S. Huntington Ave., Boston, 02130	Fed. Hosp. Stipend	3 mos.	H.S. pref. 18 yrs. minimum
BRAINTREE:			
Elihu White Nursing Home 95 Commercial St., Braintree, 02184	Fed. grant -	5 wks. (200 hrs.)	18 yrs. min. H.S. grad. Pers. interv.
John Scott House Nursing Home 233 Middle St., Braintree, 02184	Fed. Dept. Labor	5 wks. (200 hrs.)	-
BROCKTON:			
Brockton Dept. of Pub. Welf. Work Exp. Progr. 196 Main St., Brockton 02402	Fed. OEO Stipend	12 wks. (5 dys wk. 5 hrs. dy)	Low income. Pers. interview
West Acres Nursing Home, Inc. 804 Pleasant St., Brockton, 02402	Fed. OEO Stipend	14 wks.	Req. of Publ. Welf.

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NURSE AIDE cont.

Institution Offering the Training	Funding/Stipend	Length of Course	Eligibility
BEDFORD:			
Veterans Administration Hospital 200 Springs Road, Bedford, 01730	Hospital Salary	10 wks.	-
CAMBRIDGE:			
* Cambridge City Hospital 1493 Cambridge St., Cambridge 02139	Hospital Salary	2 wks.	2 yrs. H.S. 18-65 yrs.
Holy Ghost Hosp. & Card. Cushing Rehab. C. 1575 Cambridge St., Cambridge, 02138	Hospital Salary	6 mos. 3 wks. + inservice	H.S. grad.pref.8th gr. accept. Literate
* Mount Auburn Hospital Mt. Auburn St., Cambridge	Hospital Salary	1 wk. + on-going 40 hrs.	17-60 yrs. 1 yr. H.S. min.
CANTON:			
* Massachusetts Hospital School Canton, 02021	Hosp.- State Stipend	3 wk. on-going	18-50 yrs., H.S.
CLINTON:			
Clinton Hospital 201 Highland, St., Clinton, 01510	Hospital No Stipend	1-2 wks. (40 hrs.)	17-50 yrs. 10th gr. Pers. qualif.
CONCORD:			
* Emerson Hospital Old Rd. to Nine Acre Corner, Concord, 01742	Hospital Tuition	40 hrs.	18 yrs. min. H.S. grad. preferred
EVERETT:			
Whidden Memorial Hospital 103 Garland St., Everett, 02149	Hospital No Stipend	60 hrs.	18-60 yrs. H.S.ed. preferred
FALL RIVER:			
Bd. of Public Welfare 245 Stanley St., Fall River, 02730 in coop. with Earl E. Hussey Hosp. Fall River	Fed. MDTA & Hospital	12 wks.	10th gr. Req. of Bd. Public Welf.
Diman Vocational School 45 Morgan St., Fall River	Fed. MDTA Stipend	5 wks. (40 hrs. wk.)	18 yrs. min. 9th gr. grad.
FITCHBURG:			
Hillcrest Nursing Home 94 Summer St., Fitchburg, 01520	Home Salary	On-the-job (1-2 hrs. wk.)	H.S. education
FRAMINGHAM:			
Cushing Hospital Dudley Rd., Framingham, 01702	Hospital Salary	On-the-job	Flexible
GREENFIELD:			
Greenfield Community College. Nursing Dept. 125 Federal St., Greenfield, 01301	Fed. State No Stip. No Tuit.	6 wks. (180 hrs.)	Literate.

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NURSE AIDE cont.

Institutions Offering the Training	Funding/Stipend	Length of Course	Eligibility
HAVERHILL:			
Haverhill Welfare Dept. Work Trng. Prog. 68 Buttonwoods Ave., Haverhill,	Fed. OEO Stipend	420-480 hrs.	Nursing aptitude GATB
HINGHAM:			
Deering Nursing Home, Inc. 1193 Main St., Hingham, 02043	Home Salary	on-the-job	-
HOLDEN:			
Holden District Hospital, Inc. Boyden Rd., Holden, 01520	Hospital Salary	48 hrs.	-
HOLYOKE:			
Holyoke Dept. Public Welfare City Hall Annex, Rm. 412, Holyoke, 01040 (Affiliate) Holyoke Municipal Home, Lower Westfield Rd.	Federal Stipend	26 wks. (6 hrs. dy., 5 dys. wk.)	Welfare recipient AFDC
Providence Hospital (nurses aide & male orderly) 1233 Main St., Holyoke, 01041	Fed. grant pending	4-6 wks. Planned	H.S. graduate
LAKEVILLE:			
Lakeville Hosp. Mass. Dept. of Pub. Health Main St., Lakeville, 02346	State Salary	4 wks. orientation on-the-job	Prefer H.S. grad & 35-55 yrs. Literate.
LAWRENCE:			
Lawrence General Hosp. Education Dept. 1 Garden St., Lawrence, 01842	Hospital Stipend	105 hrs. orientation + on-the-job	20-55 yrs. H.S. grad. or equiv. Literate.
Town Manor Nursing Home 55 Lowell St., Lawrence, 01840	Home Salary	8 wks	Pers. qualifications
LOWELL:			
Lowell Bd. of Pub. Welf. Work Exp. & Training Progr. 100 Merrimack St., Lowell, 01852 (Affiliate) D'Youville Manor Nurs. Home, 981 Varnum St., Lowell 01854	Fed. OEO Stipend	6 mos. (4 hrs. wk.)	Welfare recipient AFDC
St. John's Hospital 14 Bartlett St., Lowell, 01852	Hospital No Stipend	280 hrs.	16 yrs. min. 8th gr. grad. Coed. Literate
LUDLOW:			
Ludlow Hospital 14 Chestnut Place, Ludlow, 01056	Hospital No Stipend	100 hrs.	H.S. graduate
LYNN:			
Union Hospital 500 Lynnfield St., Lynn	Hospital Salary	5 wks. on-job 200 hrs.	H.S. graduate 18 yrs.

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NURSE AIDE cont.

Institution Offering the Training	Funding/Stipend	Length of Course	Eligibility
MALDEN:			
Malden Hospital Hospital Rd., Malden, 02148	Hospital Stipend	5 wks.	18-55 yrs. H.S. grad. preferred
METHUEN:			
Bon Secours Hospital 70 East St., Methuen, 01844	Hospital Salary	48 hrs. on-the-job	8th gr. accept. H.S. preferred
NATICK:			
*Leonard Morse Hospital 67 Union St., Natick 01760	Hospital Stipend	5-7 wks. (60 hrs.)	
NEEDHAM:			
Glover Memorial Hospital 148 Chestnut St., Needham, 02192	City -	On-the-job	-
NEW BEDFORD:			
Sacred Heart Home 359 Summer St., New Bedford, 02740	Home Salary	Inservice, once a mo. Daily superv.	-
St. Luke's Hospital. Nursing Dept. 101 Page St., New Bedford, Mass. 02740	Hospital Stipend	4 wks. (160 hrs.)	18 yrs. min. 10th gr. Phys. exam.
NEW SALEM:			
New Salem Academy Voc. H.S. New Salem (Affiliate) Athol Memorial Hosp. 2033 Main St., Athol, 01331	Fed. -	6 wks. 180 hrs.	18-50 yrs. 10th grade.
NEWBURYPORT:			
Anna Jacques Hospital Highland Ave., Newburyport, 01950	Hospital Salary	100 hrs.	18-45 yrs. 1-2yrs. H.S. Pers. Interv.
NEWTON LOWER FALLS:			
Newton-Wellesley Hospital 2014 Washington St., Newton L.Falls,02162	Hospital Salary	3-4 wks.	18 yrs. H.S. grad. Empl. 1 yr. hosp.
NORTH ADAMS:			
Chas. H. McCann Reg. Vocational H.S. Hodges Crossroads, North Adams, (Affiliate) North Adams Hosp. Hospital Ave., North Adams, 02147	Hospital Salary	2 wks. in hosp.	Flexible
NORTH ATTLEBORO:			
Madonna Manor Nursing Home 85 N. Washington St., No. Attleboro, 02760	Home Salary	On-the-job, 1 hr. daily	H.S. grad. or over
NORTH READING:			
Holiday Nursing Homes, Inc. (Nurse aide-orderly) 134 North St., North Reading, 01864	Home Salary	48 hrs. on-the-job	17-50 8th gr. grad.

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NURSE AIDE cont.

Institution Offering the Training	Funding/Stipend	Length of Course	Eligibility
PLYMOUTH:			
Plymouth-Carver Regional H.S., Plymouth (Affiliates) Jordan Hosp., Sandwich St. and several local approved nurs. homes.	Fed. MDTA & Local	8 wks. (320 hrs.) -	Req.of Div.Empl. Sec.
QUINCY:			
Presidential Convalescent Home 43 Old Colony Ave., Wollaston (Quincy) 02170	-	Planned	Planned
Quincy Bd. of Public Welfare 117 School St., Quincy, 02169 (Affiliate) Quincy Nursing Home 11 McGrath Highway, Quincy, 02169	Fed. OEO Stipend	15 wks.	Over 21, married Over 50, single Welf. recipient
Wentworth Manor Nurs. Home (Nurse aide & orderly) 205 Elm St., Quincy, 02169	Home Stipend	2 mos.	-
RUTLAND:			
Rutland Heights Hosp. Mass. Dept. Health, Rutland, 01543	State Salary	480 hrs.	18 yrs. 9th gr. grad.
SALEM:			
*Salem Hospital 81 Highland Ave., Salem, 01970	Hospital Salary	6 wks.	H.S. preferred 18-50 yrs.
SOMERVILLE:			
Somerville Trade H.S. 33 Cross St., Somerville	Fed. MDTA Stipend	8 wks. (240 hrs.)	8th gr. education
(Affiliates) Somerville Hospital 25 Brastow Ave., Somerville, Cambridge Dept. Pub. Welf., Work Exper. & Tr. Progr., 99 Austin St., Cambridge	Fed. MDTA	-	Welfare recipient
SOUTHBRIDGE:			
Harrington Memorial Hospital 100 South St., Southbridge	Hospital Stipend	5 wks.	17 yrs. H.S. grad pref.
SPRINGFIELD:			
*Mercy Hospital 233 Carew St., Springfield, 01104	Hospital Stipend	6 wks.	17-50 yrs.
Springfield Health Dept. 1414 State St. (Affiliates) Springfield Hospital Springfield Municipal Hospital	-	-	-
Springfield Hospital 759 Chestnut St., Springfield, 01107	Hospital Salary	5 wks.	H.S. grad. pref.
Springfield Jewish Home for the Aged 44 Copley Terrace, Springfield, 01107	Home Stipend	6-8 wks.(12-16 hrs. ea. wk.)	Employees of home

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NURSE AIDE cont.

Institution Offering the Training	Funding/Stipend	Length of Course	Eligibility
STONEHAM:			
*New England Memorial Hospital 5 Woodland Rd., Stoneham 02180	Hospital No stipend	3 weeks (8:30-4)	18 yrs. Welfare recipient
TAUNTON:			
Taunton Bd. of Public Welfare 78 DeWert Ave., Taunton	Fed. OEO Stipend	320 hrs.	Welf. recipients Pers. qualific.
WALTHAM:			
*Waltham Hospital Hope Ave., Waltham 02154	Hospital Stipend	2 wks. 8 hrs. dy.	18-55 yrs.
WEBSTER:			
Webster Convalescent Home 749 School St., Webster, 01570	Home -	130 hrs.	15 yrs. min. 10th grade
WEST ROXBURY:			
*Veterans Administration Hospital 1400 V.F.W. Parkway	Hosp.-Fed. Stipend	1 yr. 400 hrs.	18 yrs.
WHITINSVILLE:			
Whitinsville Hospital 18 Granite St., Whitinsville 01588	Hospital Salary	12-18 hrs.(6 courses 2-3 hr.)	Over 21. Flexible
WINCHESTER:			
*Winchester Hospital 41 Highland Ave. Winchester, 01890	Hospital Stipend	4 wks.	H.S., good health
WORCESTER:			
Clark Manor Nursing Home 1359 Main St., Worcester, 01603	Fed.Dept. Labor Salary	5 wks. (2 hrs.dy)	Employee
Memorial Hospital 119 Belmont St., Worcester, 01605	Hospital Stipend	6 wks.	21-50 yrs. H.S. grad. preferred
Worcester City Hospital 26 Queen St., Worcester, 01610	Hospital Salary	Inservice	Employee
WOBURN:			
*Charles Choate Memorial Hospital 22 Warren Ave., Woburn, 01801	Hospital Stipend	6 wks. (30 hrs. wk.)	Character & Aptitude

NURSE AIDE SUPPLEMENTAL COURSES cont.

There are four nurse aide supplemental training programs reported in Massachusetts. Two teach rehabilitation skills - simple care of the patient such as positioning, transfer activities, and basic exercises, under the direction and supervision of the professional staff. The aides encourage the patients physically, mentally, and socially to perform at maximum capacity. The third course is geared for work with the elderly and the graduate is called a geriatric aide; the fourth program is a senior nurse aide course which gives the nurse aide added general skills and responsibilities.

The first supplemental training program was given by Springfield Hospital in 1962 to improve general skills. This five day course plus clinical experience has trained thirty-seven aides. Berkshire Rehabilitation Center in Pittsfield and Holden Nursing Home in Holden have offered training for rehabilitation within the last two years. The rehabilitation center provides a program for three nursing homes in the area for ongoing inservice training of thirty hours, half classroom and half on-the-job. Holden Nursing Home has inservice training and nineteen aides have completed the course. Their training takes place on a monthly basis over one year, totaling eighteen hours, plus ten hours of formal on-the-job training. The David Hale Fanning Trade School course for geriatric aides has been in operation two years and has graduated 138. It is fifty hours, thirty four in the classroom and sixteen in practical experience.

To qualify for the training in Pittsfield the applimust be employed at one of the participating nursing homes. A certificate is awarded at completion of this course. The nursing home in Holden has a minimum age requirement of seventeen years and at least an eighth grade education is necessary. Fanning Trade High School offers its course for employed nurse aides and also grants a certificate. At Springfield Hospital, a candidate must be employed as a nurse aide at the hospital and have an excellent record for at least a year in order to take the advanced training.

The course conducted by Berkshire Rehabilitation Center is designed by the instructor who is a professional nurse. At the nursing home two registered physical therapists (one on a full time and one on a part time basis) have developed the course. The Fanning course curriculum is designed by a research staff at the Aged Center in Worcester and Boston College School of Nursing personnel. It is taught by a doctor and seven instructors with master's degrees, four with bachelor's degrees, and one a diploma graduate. At the hospital, the course is designed and taught by instructors in the teaching department.

A curriculum for supplementary rehabilitation skills includes: an introduction to physical therapy and rehabilitation, body mechanics and skin care, positioning and transfer activities of the patient, self-care activities for daily living - dressing, hygiene, feeding, etc., motion and conditioning exercises, as well as training in case of special conditions or diseases.

For the senior nurse aide course, instruction consists of taking blood pressures, applying K-packs and witch hazel packs, colostomy care, skin preparation in pre-operative care, and assisting the doctor with pelvic and rectal examinations.

NURSE AIDE SUPPLEMENTAL COURSES cont.

There is no tuition charge for any of the courses. The nursing homes pay for the instruction supplied by the rehabilitation center, Holden Nursing Home supplies its own training funds, and Fanning Trade High School is supported by federal, state, and local funds. The nurse aides at Springfield Hospital receive a salary during training, supplied by hospital funds.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Berkshire Rehabilitation Center 741 North St., Pittsfield, 01201 Participating nursing homes: Berkshire Hills, Rte. #23, Monterey Mapleview, Inc., Washington Valley View, Pittsfield Rd., Lenox	Nursing Homes Salary	12 sessions inservice (simple rehabil. skills)	Employees of nursing homes
David Hale Fanning Trade High School 24 Chatham St., Worcester, 01608	State Voc.Ed.	50 hrs. upgrading	Employed aides
Holden Nursing Home 32 Mayo Dr., Holden, 01520	Home Salary	1 yr., 10 hrs. basic+1½hrs. ea.mo.	17 yrs.-8th gr.
Springfield Hospital 759 Chestnut St., Springfield, 01107	Hospital Salary	5 days, 40 hrs.	Emp. as nurse aide

NURSE ANESTHETIST

The nurse anesthetist assists the anesthesiologist in administering anesthesia to patients during surgical procedures, and monitors the patient's condition during the operation.

Ten hospitals report training for nurse anesthetists. The first program was started at St. Vincent's Hospital in Worcester in 1940. Two others began in the 1940s, two in the 1950s, and four in the 1960s. Five of these hospitals are in the Boston area, one is in Fall River, one in North Adams, one in Pittsfield, and one in Springfield. Over 430 nurse anesthetists have been trained by these ten institutions. Class sizes range from two to six students.

Nine of the courses are eighteen months and one is one year. The bulk of the course is spent in clinical experience, with classroom instruction averaging about one third of the training. Only three programs report on-the-job training; in two programs it comprises seventy-five percent of the time, and in the third, thirty-five percent of the time.

Nurse anesthetist courses are restricted to registered nurses. One hospital required one year of experience and has an age maximum of forty years; another requires two years of experience. All the courses give certificates except one which gives a diploma. The nurse anesthetists are eligible for professional certification by the American Association of Nurse Anesthetists (AANA).

NURSE ANESTHETIST cont.

All the courses are based on AANA requirements. Five hospitals state that their chief anesthesiologist or educational director coordinated their curricula.

There is no tuition charge at eight of the institutions. Two programs charge $100, one of these gives a stipend of $100 a month and the other gives $115 a month. All other stipends range from $200 to $350 a month. Two programs do not offer stipends.

The largest faculty includes six full time doctors and three part time instructors, two with bachelor of science degrees and one with professional certification. The smallest staff is comprised of one instructor with post doctorate study and one doctor.

The curriculum is extensive, but the instruction can be broken down into three areas: agents, technique, and scope. Some of the courses may be: an orientation to anesthesia, stages and signs and the phenomena, pre-operative and post-operative care, the use of anesthetic equipment, general inhalation, anesthetic agents, spinals and locals, complications of anesthesia and principles of emergency treatment, explosion hazards and precautionary measures, management of special types of anesthesia, an introduction to fundamental concepts of chemistry and physics, a review of the autonomic nervous system, the respiratory system, the circulatory system, metabolism, physiology of shock. The course also includes lectures in professional adjustment, applied psychology, organization and management of the division of anesthesia.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Boston City Hospital 818 Harrison Ave., Boston, 02118	City Stipend	2 yrs.	Registered nurse 2 yrs. exper.
Carney Hospital 2100 Dorchester Ave., Boston, 02124	Hospital Stipend	18 mos.	Registered nurse
Mercy Hospital, Dept. of Anesthesia 233 Carew St., Springfield, 01104	Hospital Stipend	18 mos.	RN. 21-40yrs. 1 yr. exper.
New England Medical Cen. Hosps.Dept. of Anes. 171 Harrison Ave., Boston, 02111	Hospital Stipend	2 yrs.	Regist. nurse in Mass.
North Adams Hospital Hospital Ave., North Adams, 01247	Hospital -	18 mos.	Registered nurse
Pittsfield Gen.Hosp.Sch. of Anesthesia for Nurses, North St., Pittsfield, 01201	Hospital Stipend	18 mos. (400 hrs.)	Registered nurse
Quincy City Hospital 114 Whitwell St., Quincy, 02169	Hospital -	18 mos.	Registered nurse
St. Vincent Hospital, Anesthesia Dept. 25 Winthrop St., Worcester, 01604	Hospital Stipend	18 mos.	RN. Under 40 Regis. in Mass.
Union Hospital in Fall River, Highland Ave. at New Boston Rd., Fall River, 02729	Hospital Stipend	18 mos. (250 hrs.)	Registered nurse
University Hospital, Anesthesia Dept. 750 Harrison Ave., Boston, 02118	Hospital -	18 mos.	Registered nurse

NURSING HOME ACTIVITY DIRECTOR (Supplementary course)

The activity director in a nursing home plans the recreation activities for patients in the home.

At the request of Massachusetts nursing homes, the State Department of Public Health, Nursing Homes and Related Facilities Division, offers an orientation program for nursing home personnel already functioning as activity directors. These trainees may be aides, occupational or physical therapy assistants, but may also include others.

The seven week course (twenty-one hours), was given twice at two different locations in 1967 and fifteen participants from fifteen nursing homes attended. The workshop curriculum, designed by an occupational therapy consultant in the Division of Nursing Homes and Related Facilities, includes lectures, films, craft instruction and games. A certificate is awarded at the end of the course.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Mass. Dept. Public Health, Div. of Nursing Homes, 170 Morton St., Jamaica Plain, 02130	State Salary	7 sessions	Employed personnel in nursing homes (upgrading)

NURSING HOME ADMINISTRATOR

The nursing home administrator is trained to manage the nursing home or smaller general care unit. In Massachusetts, this training has been provided by the Nursing Home and Small Hospital Administration Program of Northern Essex Community College in Haverhill since September 1966. Approximately twenty students have graduated.

The course extends over twenty months (two academic years), and is ninety-four percent classroom instruction, three percent clinical and three percent on-the-job training. The curriculum is designed by members of the Business Department and the faculty consists of one full time and three part time instructors with masters degrees.

The student receives a diploma after successful completion of the program and is eligible for licensure within Massachusetts.

Tuition is $200 per semester for full time work and $18 for a credit hour for each course on a part time basis.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Northern Essex Community College 50 Chadwick St., Haverhill, 01832 (Nursing Home & Small Hospital Admin.)	State Tuition	2 yrs. (20 mos.)	H. S. grad. College entrance tests

OCCUPATIONAL THERAPY ASSISTANT

The occupational therapy assistant helps carry out activity programs to assist in rehabilitating patients, under the direct supervision of the occupational therapist. The programs are concerned with improving patient morale, as well as providing an opportunity for prevocational exploration and supplying a diversity of media to motivate patient interests. The assistant may prepare and lay out the work materials and supplies and assist in maintenance of tools and equipment. He will report to and consult with the therapist regarding patient progress and possible changes in procedures.

The Massachusetts Department of Mental Health conducts training for occupational therapy assistants in conjunction with Boston State Hospital. This is an inservice, thirteen week program (455 hours). One third of the course is classroom, one third is instruction in media (manual and creative crafts, bowling, dressmaking), and one third is a clinical experience in an occupational therapy clinic outside of the trainee's home area. The course started in 1947. The first eight programs were held at Westborough State Hospital and then moved to Boston State Hospital. By 1967 ninety seven assistants had been trained in this program.

The trainee must be a non-registered member of the occupational therapy department at Boston State Hospital who has not completed a recognized occupational therapy curriculum. She must be in good physical health, from 18-55 years of age, with two years of high school.

The program is funded by the Commonwealth of Massachusetts and there is no tuition charge. The graduate receives a certificate from the Department of Education and is eligible for certification by the American Occupational Therapy Association.

The faculty in the 1967 program at Boston State Hospital consisted of one full time and thirty-nine part time instructors ranging from one occupational therapy assistant to thirteen doctors.

The curriculum is designed by the head occupational therapist and his staff. Courses include: the history and philosophy of occupational therapy; the role and function of occupational therapy, orientation to hospital services, personality development, clinical conditions, treatment, group dynamics, theory of occupational therapy, specialty skills, supervised experience, evaluation, creative time in which the trainees create projects, have discussion periods and meetings.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Boston State Hospital, Mass. Dept.of Mental Health, 591 Morton St., Dorchester, 02124 (Hospital is also an affiliate for OT students at Boston Univ. & Tufts Univ.)	State Salary	13 wks. (455 hrs.)	Employed non-registered members of O.T. departs. H.S.grad/equiv.

OPTICIAN (DISPENSING OPTICIAN)

The optical dispenser analyzes and fills eyeglass prescriptions and fabricates eye glasses. He repairs, adjusts and dispenses glasses.

Worcester Industrial Technical Institute has offered a training program in optical technology since 1965 and plans a cooperative training program for September 1968. The course is two years with sixty percent of the time in classroom and forty percent in laboratory training.

The curriculum is designed by the dean of curricula at the institute with advisors from the optical field. The first year courses include: lens surfacing laboratory, opthalmic mechanical optics, lens design, geometric and physical optics, physics, engineering mathematics, and English. In the second year students take lens finishing laboratory, contact lens theory, anatomy and physiology of the eye, opthalmic dispensing, economics, and chemistry.

An applicant must be high school graduate with a college preparatory course which includes two years of algebra, four years of English, and one of science. Upon completion of the course the student receives a diploma. The program is awaiting accreditation to grant an associate degree and the course is accredited by the Massachusetts Association of Retail Opticians.

Tuition is free for Worcester residents and $700 for state residents paid by the community in which the student lives. The program has federal, state and local funding. The faculty consists of of four full time instructors with MAs and two with college degrees.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Worcester Industrial Technical Institute 26 Salisbury St., Worcester, 01605	Fed. St. Local No Tuition	2 yrs.	High school College prep.

ORTHOPTIST

Under the supervision of an opthalmologist, the orthoptist works with children and adults who need training in coordinating the use of the two eyes. In addition to helping diagnose defects in eye coordination and teaching patients the proper use of the eyes by appropriate exercises, the orthoptist may assist the opthalmologist with other professional tasks. An orthoptist usually works for one or more opthalmologists in an office, clinic, hospital or medical school. Some orthoptists teach or do research in the field of orthoptics.

The only training center for orthoptics in Massachusetts accredited by the American Orthoptic Council, is at the Massachusetts Eye and Ear Infirmary, Boston, in cooperation with Harvard Medical School. An applicant to this program must be eighteen years old and have a minimum of two years college education.

The fifteen month program has been given annually since 1948, and approximately twenty-three orthoptists have been trained. Class sizes range from

ORTHOPTIST cont.

one to four trainees. There is no tuition charge for the training and no stipend is given.

The course is certified by the American Orthoptic Council and is organized according to their standards, but is designed by two doctors at the infirmary. A diploma is granted upon completion of the course, and some of the students continue at Simmons College for a B.S. degree. One third of the student's time is spent in classroom study and two thirds is clinical or on-the-job. The faculty has one full time and ten part time instructors ten of whom are doctors.

According to the council, there are at present many more positions available throughout the country than orthoptists to fill them Existing facilities for training orthoptists are limited and ordinarily, less than fifty are trained each year in the United States. This is hardly enough to replace those who retire. Salaries range from $500 a month and up.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Massachusetts Eye & Ear Infirmary 243 Charles St., Boston, 02114 (Simmons students go on for BS degree)	Hospital Tuition	15 mos.	2 yrs college 18 yrs. min.

PHYSICAL THERAPY ASSISTANT

The principal duty of the physical therapy assistant is to relieve the physical therapist of the many routine procedures not requiring professional ability. Under the direct supervision of the physical therapist, he aids disabled patients in overcoming their handicaps, and provides assistance in walking and in simple reconditioning exercises. He is responsible for the safety of the patient, helps at the bedside providing special equipment and assisting with patient transfer to wheelchair. He may be responsible for escort service, preparing patient for treatment, care of equipment and supplies, preparation of charts and schedules, and the keeping of records.

Two nursing homes, a technical institute, and the Work Experience and Training program of the Board of Public Welfare offer training for physical therapy assistants in Massachusetts. Springfield Technical Institute, in affiliation with cooperating hospitals began training in 1964 and the others began in 1966 and 1967. Fifty-three physical therapy aides have been trained in the four programs. The Board of Public Welfare in Lowell affiliates with a nursing home and hospital where the training is conducted.

The technical institute offers the longest program (one year) for high school graduates. A six month course is given for low income persons by the Lowell Work Training program. The other courses are a ten hour basic course with one and a half hours a month ongoing, and a forty-eight hour inservice training program with no educational requirements

Classroom instruction accounts for half the training time in the technical institute and Work Training program. In the two nursing homes. the training is predominantly clinical or on-the-job with the

classroom taking from twenty to thirty-three percent of the time.

At present there is no professional certification in this field. However, three of the programs offer their own certificates, and the American Physical Therapy Association is developing criteria for more uniform certification. In 1967 it adopted an outline for training and policy.

Tuition is free for all the courses. The Work Training program gives a stipend of $43.50 a month.

The curricula are designed by the physical therapists, professional nurses and administrators at each of the institutions. Courses may include an orientation to physical therapy, instruction in ethical considerations, body mechanics, skin care, body positioning, supportive equipment and protective devices, transfer activities, procedures for exercise, basic psychology, special care, and office procedures.

The teaching staff at the Linda Richards Nursing Home in Dorchester consists of one certified professional and one college graduate. Springfield Technical Institute has one full time certified professional and four part time teachers with master's degrees. The other two programs use the professional staffs of their own or affiliating nursing homes and hospitals.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Holiday Nursing Homes, Inc. 134 North St., North Reading, 01894	Home Salary	48 hrs. inservice	17-50 years 8th gr. educ.
Linda Richards House Nursing Home 637 Washington St., Dorchester, 02124	Home Salary	1-2 wks. inservice	16 yrs.min. Mature, Literate.Pers.interv.
Lowell Bd.of Pub. Welf. Work Training Prog. 100 Merrimack St., Lowell	Fed. OEO	22 wks.(25hrs, wk.) 550 hrs.	-
(Affiliates) D'Youville Nursing Home,981 Varnum Ave.,Lowell St. Joseph's Hospital,220 Pawtucket St.,Lowell, 01854			
Springfield Technical Institute 1300 State St.,Springfield, 01109	Fed. St.City No tuit.residents	1 yr.(May become 2 yr. program)	H. S. graduate

PROFESSIONAL NURSE

Although the training of professional nurses was not in the scope of this survey and no questionnaires were mailed to the training institutions nor statistics compiled, the training institutions are being listed in the inventory for the convenience of vocational guidance counselors. It also makes the inventory a complete listing of all categories at "less than the baccalaureate level" in Massachusetts.

There are forty-nine institutions offering courses to prepare nurses for registration (R.N.) at less than the baccalaureate level. Forty-three of them are diploma programs and six are associate degree programs. The six baccalaureate degree nurse training programs are included in a separate survey of health manpower training above the baccalaureate level.

** Professional Nurse (Diploma)

Attleboro:	Sturdy Memorial Hospital School of Nursing, 211 Park St., 02703
Beverly:	Beverly Hospital School of Nursing, Herrick & Heather St., 01915
Brighton:	St. Elizabeth's Hospital School of Nursing, 235 Washington St., 02135
Brockton:	Brockton Hospital School of Nursing, 680 Centre St., 02402
Boston:	Children's Hospital School of Nursing, 300 Longwood Ave., 02115
	City of Boston, Dept. of Health & Hosps., (Boston City Hosp.), 710 Mass. Ave., 02118
	Faulkner Hospital School of Nursing, 1153 Centre St., 02130
	Massachusetts General Hospital, Fruit St., 02214
	New England Baptist Hospital School of Nursing, 91 Parker Hill Ave., 02120
	New England Deaconess Hospital School of Nursing, 185 Pilgrim Rd., 02215
	Peter Bent Brigham Hospital School of Nursing, 721 Huntington Ave., 02115
Cambridge:	Mount Auburn Hospital School of Nursing, 330 Mt. Auburn St., 02138
Dorchester:	Catherine Laboure School of Nursing, 2100 Dorchester Ave., 02124
Everett:	Whidden Memorial Hospital School of Nursing, 103 Garland St., 02149
Fall River:	St. Anne's Hospital School of Nursing, 243 Forest St., 02721
	Truesdale Hospital School of Nursing, 1820 Highland Ave., 02720
	Union Hospital School of Nursing, Highland Ave. & New Boston Rd., 02720
Fitchburg:	Burbank Hospital School of Nursing, Nichols Rd., 01420
Framingham:	Framingham Union Hospital School of Nursing, 85 Lincoln St., 01701
Gardner:	Henry Heywood Memorial Hospital School of Nursing, 242 Green St., 01440
Holyoke:	Holyoke Hospital School of Nursing, 575 Beech St., 01040
	Providence Hospital School of Nursing, 206 Elm St., 01040
Lawrence:	Lawrence General Hospital School of Nursing, 1 Garden St., 01842
Leominster:	Leominster Hospital School of Nursing, Hospital Rd., 01453
Lowell:	Lowell General Hospital School of Nursing, 295 Varnum Rd., 01854
	St. Joseph's Hospital School of Nursing, Gage St., 01854

Lynn:	Lynn Hospital School of Nursing, 212 Boston St., 01904
Malden:	Malden Hospital School of Nursing, Hospital Rd., 02148
Medford:	Lawrence Memorial Hospital School of Nursing, 170 Governor's Ave., 02155
Melrose:	Melrose Wakefield Hospital School of Nursing, 585 Lebanon St., 02176
New Bedford:	St. Luke's Hospital School of Nursing, 101 Page St., 02740
Newton Lower Falls:	Newton Wellesley Hospital School of Nursing, 2014 Washington St., 02162
Northampton:	Cooley Dickinson Hospital School of Nursing, 30 Locust St., 01060
Pittsfield:	St. Luke's Hospital School of Nursing, 333 East St. 01202
Quincy:	Quincy City Hospital School of Nursing, 114 Whitwell St., 02169
Salem:	Salem Hospital School of Nursing, 81 Highland Ave., 01970
Somerville:	Somerville Hospital School of Nursing, 30 Crocker St., 02143
Springfield:	Mercy Hospital School of Nursing, 233 Carew St., 01104
	Springfield Hospital School of Nursing, 759 Chestnut St., 01107
Worcester:	Memorial Hospital School of Nursing, 119 Belmont St., 01605
	St. Vincent"s Hospital School of Nursing, 25 Winthrop St., 01604
	Worcester City Hospital School of Nursing, 26 Queen St., 01610
	Worcester Hahnemann Hospital School of Nursing, 281 Lincoln St., 01605

**Professional Nurse (Associate Degree)

Atlantic Union College Department of Nursing, South Lancaster, 01561
Lasell Junior College Department of Nursing, 1844 Commonwealth Ave., Auburndale, 02166
Newton Junior College Department of Nursing, Washington Park at Walnut, Newtonville, 02160
Northeastern University College of Nursing (3 yrs.), 360 Huntington Ave., Boston, 02115
Quinsigamond Community College Department of Nursing, 251 Belmont St., Worcester, 01605
Regional Community College at Greenfield Department of Nursing, 125 Federal St., Greenfield, 01301

PROFESSIONAL NURSE SUPPLEMENTARY COURSES

Supplementary courses are offered for the professional nurse to give orientation in certain specialized fields of medical care, and to give instruction in the technical skills needed in the areas of psychiatry, restorative nursing, mental retardation, supervisory nursing,and current drugs and medication. These are refresher courses for professional nurses who have been out of service and wish to update their skills before returning to practice.

In Massachusetts seventeen supplementary and refresher courses are conducted by eight hospitals (including two state hospitals), a community college, two state schools, a counseling training center, a local department of public health, and two technical high schools. Eight of the courses are refresher training, the rest supplemental.

The refresher courses are four to six weeks (with

PROFESSIONAL NURSE SUPPLEMENTARY COURSES cont.

one exception which is two hours a week for fifteen weeks. The mental retardation supplementary training is six weeks; the psychiatric training, ten weeks; and the psychiatric counseling, ten months. The restorative nursing course is five days with thirty hours of instruction.

Metropolitan State Hospital, the first to offer a supplemental course, has been conducting psychiatric nursing orientation since 1955. St. Vincent's Hospital in Worcester began a refresher training course in 1964. The others started after 1964, and since then 757 have received training (325 were trained in 1967).

Most of the instruction time is used in the classroom supported by either clinical or on-the-job experience. Only three of the programs are less than half formal instruction. The courses are designed by the director of the nursing service of the medical institution with the aide of specialists if the training covers a specific field of medicine.

The technical schools have special committees of professional nurses and others in the field.

The refresher courses acquaint the inactive nurse with current techniques of modern nursing. They review patient needs and expectations, hygiene, comfort and safety, nutrition and vital signs; basic arithmetic, measurements, reporting and charting; aseptic techniques; body reactions; care of the surgical patient; care of specific diseases and conditions; and drugs in modern medicine. The special supplemental courses concentrate on the practices associated with their field of study.

The largest instruction staff is at the para-psychiatric training center and consists of five part-time doctors. The other teaching staffs have from one to three members whose degrees range from professional certification to MD.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Boston City Hospital 818 Harrison Ave., Boston, 02118 (Nurse Refresher)	Hospital Stipend	1 mo.	Registered nurse
Paul A. Dever State School (Mental Retardation) 1380 Bay St., Box 631, Taunton, 02780	Fed. State Salary	6 wks. (75 hrs.)	RN employed at school
David Hale Fanning Trade High School 24 Chatham St., Worcester, 01608 (Drug Refresher Course)	State.Voc.Ed.	30-54 hrs.	Registered nurse employed in hospitals
(Nurse Refresher)	Fed. MDTA & State	5 wks.	RN returning to nursing
(Rehabilitation Techniques)	Fed.-State Voc. Ed.	5 days (30 hrs.)	Employed RN

continued on next page.

PROFESSIONAL NURSE SUPPLEMENTARY COURSES cont.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Fernald State School 200 Trapelo Rd., Waltham, 02179 (Supervisory course)	Fed.NIMH Stipend	6 hrs.	Registered nurse employed at institution
Greenfield Community College 125 Federal St., Greenfield (Nurse refresher)	Federal	5 wks.(30hrs. per wk.)	RN not employed for past five yrs.
Harrington Memorial Hospital 100 South St., Southbridge, 01550 (Refresher Course for Latest Medication)	Hospital Stipend	-	Registered nurse
Lowell Trade High School 43 French St., Lowell (Nurse Refresher) (Affiliate) Lowell General Hospital, Lowell	Fed. MDTA	5 wks.	Registered nurse
Medfield State Hospital Hospital Rd., Harding, 02052 (Psychiatric nursing)	Fed. NIMH & State	2 wks. orient. 20 hrs/yr. ongoing	Registered nurse
Metropolitan State Hospital 475 Trapelo Rd., Waltham, 02154 (Psychiatric Refresher Course)	Federal Stipend	10 wks.(1hr. per wk.)	Registered nurse, most out of hosp. 10 yrs.
North Adams Hospital Hospital Ave., North Adams, 01247 (Nurse Refresher)	Fed.MDTA	6 wks. (12 days)	Registered nurse
Providence Hospital 1233 Main St., Holyoke, 01041 (Nurse Refresher)	Federal Stipend	150 hrs.	Registered nurse
Springfield Counseling Training Center 759 Chestnut St., Springfield, 01107 (Counseling & ment. health superv.)	State Foundation Tuit. for credit	10 mos.	RN, school teacher, lawyer
Springfield Dept. of Public Health 1414 State St., Springfield	-	-	-
Springfield Hospital 759 Chestnut St., Springfield, 01107	Hospital	40 hrs.	Registered nurse
St. Vincent Hospital 25 Winthrop St., Worcester, 01604	Hospital Fee	15 wks. (2hrs.wk.)	Registered nurse

PUBLIC HEALTH ASSISTANT

Public health assistants perform certain tasks previously carried out by public health professionals, thus relieving the professionals to utilize their time and abilities more efficiently.

The Springfield Health Department started training in 1965 for an average of eighteen public health assistants each year. Their training program is affiliated with Holyoke Community College, the Springfield Department of Public Welfare, the Kathleen Thornton School (for child study), and the Para-Psychiatric Training Center in Springfield.

The course is two academic years plus a twelve week summer session. Half the time is spent in the classroom and half the time in the field. A stipend of $1.40 an hour, plus tuition of $100 a semester, is paid for by the federal Office of Economic Opportunity.

Candidates for this program must be recent high school graduates from lower income groups who are qualified for college level work. The student receives a certificate upon completion of the course and can also apply for credit toward an associate degree. Some may continue and enroll in four year schools. Those who wish employment at the end of the course may find positions in health and welfare departments and private agencies.

The curriculum is designed by the Springfield Health Department and Holyoke Community College. The academic program includes courses in English, sociology, mathematics (algebra, plane geometry, trigonometry, analytical geometry, foundations of mathematics, logic, sets, statistics) chemistry, psychology, botany, and zoology. Field teachers instruct in the history of public health, its structure and function in the community; health codes; nutrition; epidemiology; normal growth and development; school health services; air pollution; and accident prevention. All courses are supplemented by seminars and group discussions.

There are two full time instructors for the program and part time instructors from the community college, field work situations, and members of the health department staff. A program coordinator acts as liaison between the health department and the community college, attending classes, conferring with administrators and teachers, and counseling students.

Institution Offering the Training	Funding/Stipend	Length of Course	Eligibility
Springfield Health Department 1414 State St., Springfield (Affiliates) Holyoke Community College, Springfield Dept. Pub. Welfare, Kathleen Thornton School, Para-Psychiatric Training Center, Springfield.	Fed. OEO Stipend	27 months (future courses 24 mos.)	H.S. grad. Low income Qualified for college

RADIOLOGICAL HEALTH TECHNICIAN

The radiological health technician is trained to take, prepare and analyze samples; to assist in safety surveys of machines and areas utilizing radioactive materials; to assist in the operation of radiation surveillance equipment; to monitor radioactivity in the air and water. He may operate, maintain and calibrate laboratory counting equipment and assist in measurements to determine and control safety hazards associated with nuclear radiation in accordance with the Atomic Energy Commission.

Baird Atomic, Inc., in Cambridge has had a radiation familiarization course since 1964 and Lowell Technical Institute, Division of Evening Studies has also had an associate degree program in radiological health technology since 1964. Approximately twenty technicians have been trained by both institutions since that date.

The company course is six months and consists of five percent classroom and ninety-five percent clinical training, while the Lowell Technical Institute course is five years, part time (three evenings a week, three hours an evening for ten semesters), and is seventy-five percent classroom and twenty-five percent clinical instruction. An associate degree in science is awarded.

For admission to the course at Baird Atomic, a knowledge of electronics and other technical background is required. Lowell Technical Institute requires the student to have a high school diploma with a mathematics and science background.

The curriculum is designed by a radiation officer and the Atomic Energy Commission at Baird Atomic, and by a staff committee and consultants at the technical institute. Lowell Technical Institute's curriculum consists of one course in English composition and one other non-technical course as well as the following technical subjects: general chemistry, technical and scientific communication, college mathematics, chemical analysis, calculus, physics, radiation biology, electrical fundamentals, nuclear and radiation physics, radiation instrumentation, radioisotope techniques, sources of radiation exposure, and principles of radiation safety and control.

Tuition is free at the company and the trainees receive a technologist's salary. At Lowell Technical Institute, the course costs $10 per credit hour. Baird has three full time instructors, one with a doctorate, one with a master's degree and one with professional certification.

There are seven instructors at Lowell with MDs and PhDs; two have college degrees and one has professional certification.

Institution Offering the Training	Funding/Stipend	Length of Course	Eligibility
Baird Atomic, Inc. 33 University Rd., Cambridge	Company funds Salary	6 mos.	Knowl.of electronics + other techn. areas
Lowell Techn. Inst. Division of Evening Studies. Radiological Health Techn. Trng. Program, 1 Textile Ave., Lowell, 01854	Fed. USPHS Tuition	5 yrs. eve. 3 eves. wk. Assoc.Sci.degr.	H.S. grad. Math, Science

SURGICAL TECHNICIAN

The surgical technician acts as scrub assistant to the surgeon in the operative area by preparing, assembling, and sterilizing supplies and equipment for the operating room, and by handing instruments to the surgeon during the operation. He may also give post operative nursing care.

There are nine hospitals (four in Boston and one each in Attleboro, Lynn, Pittsfield, Methuen and Somerville), and three vocational or technical schools (in Springfield, North Adams and Worcester) offering training for surgical technicians. The technical institutions have affiliations with co-operating hospitals.

Charles H. McCann Vocational Technical School in North Adams was the first to conduct training, in 1957. Since then, over 300 surgical technicians have been trained.

The length of course varies: five courses are nine to ten months, two are twelve months, two are six months and two are three to four months. Most of the time is spent in on-the-job training or clinical instruction.

Ten of the twelve institutions specify a high school diploma as a prerequisite and many give special tests. One program has a maximum entrance age of forty years. All but one of the programs gives a certificate or diploma for training.

In the hospital programs the curricula are designed by members of the surgical staff, and at the technical schools by the instructors with the help of the surgical team. Instruction is given in hospital and surgical philosophy and history, terminology and ethics, surgical and aseptic techniques, basic and related science, and supplies.

The size of faculty varies: Two institutions have only one full time instructor, one with a master's degree and one with diploma training. The largest staff consists of one full time doctor and five part time doctors.

None of the programs has a tuition fee and nine of the twelve offer stipends.

Institution Offering the Training	Funding/Stipend	Length of Course	Eligibility
Bon Secours Hospital 70 East St., Methuen, 01844	Hospital Stipend	9 mos.	18-35 yrs. H.S.grad. English speaking
David Hale Fanning Trade High School 24 Chatham St., Worcester, 01608 (Affiliate) St. Vincent Hospital 25 Winthrop St., Worcester, 01604	State. City -	9 mos.	18-35 yrs. H.S.grad.
Hillcrest Hospital 165 Tor Court, Pittsfield, 01201	Hospital Salary	15 weeks	Employed by hospital
Massachusetts Eye & Ear Infirmary 243 Charles St., Boston, 02114	Hospital Salary	2 mos.	18-45 yrs. H.S.grad. pref. Hosp.backgr. desirable.

Institution offering the training	Funding/Stipend	Length of course	Eligibility
Chas. H. McCann Vocational Tech. School Hodges Crossroads, North Adams, 01247 (Affiliate) North Adams Hosp., Hospital Ave. W. B. Plunkett Memorial Hospital, Adams	Local No tuit. to resid. Mass. Stipend at hospitals	9 mos.	H.S. grad. 45yrs.max. Test. Refs.
Naval Hospital 1 Broadway St., Chelsea, 02150	Federal Navy pay	6 mos.	In the service. Tests
New England Deaconess Hospital 185 Pilgrim Rd., Boston, 02215	Hospital Stipend	12 mos.	H.S. grad. Tests. Div.Empl.Sec.
Somerville Hospital 125 Lowell St., Somerville, 02143	-	-	-
Springfield Technical Institute 1300 State St., Springfield, 01109	Fed.St.City -	9 mos. (1200hrs.)	H.S. grad.
St. Luke's Hospital 379 East St., Pittsfield, 01202	Hospital Stipend	10 mos. (374hrs.)	H.S. grad. 17-35.
Sturdy Memorial Hospital 211 Park St., Attleboro, 02703	Hospital -	3 mos.(280hrs.) (future 6mos.)	H.S. grad. 21 yrs. min. pref. older.
Union Hospital 500 Lynnfield St., Lynn, 10904	Hospital Salary	6 mos. on-the-job	H.S. grad. 18 yrs.

TRAINING COORDINATOR

The training coordinator works in an institution where training programs are offered. The one institution reporting a program for training coordinators describes his responsibilities as supervising and assisting in updating and developing nursing procedures. He also conducts classroom instruction, works with personnel to supplement class work, implements nursing policy, and assists the director of nursing to improve nursing care.

Webster District Hospital in Webster started its in-service program for training coordinators in August 1967 with a program for its own staff members.

The length of the course depends on the needs of the trainees. One hour a day is devoted to classroom instruction and the extent of on-the-job training varies.

The supervisory staff of the hospital designs the curriculum. There is one full time instructor who has a professional certification.

TRAINING COORDINATOR cont.

Institution offering the training	Funding/Stipend	Length of Course	Eligibility
Webster District Hospital Thompson Rd., Webster, 01570 (Supervise and assist in updating and developing nursing procedures, conducting classroom instruction, personnel, assisting director of nursing)	Hospital Salary	Inservice 1 hr. daily	Registered nurse on staff

UROLOGICAL ASSISTANT

The urological assistant aides in sterilization and urological surgical procedures. He also uses the x-ray machine, develops films and conducts laboratory procedures peculiar to urology. His job includes preparing trays for doctors and assisting them with examination and treatment. His duties may also include the maintenance of clinical records and various logs.

The Chelsea Naval Hospital conducts the only training program for urological assistants in Massachusetts, on a semiannual basis. Funds for the course are appropriated by the federal government.

An applicant must achieve a score of 100 on the General Comprehension and Arithmetic Sections of the Navy's Basic Battery test.

The course lasts 26 weeks and then training is given on-the-job in a regular forty-hour week. Approximately eight weeks (344 hours) is spent on classroom instruction; and the remaining 18 weeks (695 hours) are clinical experience.

The curriculum is designed by the U. S. Bureau of Medicine and Surgery and consists of courses in anatomy and physiology of the urinary tract; urological operating room technique, cystoscopic room technique; darkroom technique, x-ray technique in urology, and care of the cystoscopic and resectoscopic instruments; special laboratory procedures, clerical and clinic management procedures.

Institution offering the program	Funding/Stipend	Length of course	Eligibility
Naval Hospital 1 Broadway St., Chelsea, 02150	Federal Navy pay	26 wks.	In the service. Tests

WARD CLERK & UNIT COORDINATOR

The ward clerk or unit coordinator works at the floor desk in a hospital ward or patient care unit as clerk and secretary, under the supervision of the nurse in charge of the unit. She relieves the professional treatment team of many non-professional activities in order to give them more time for direct patient care. The title "unit coordinator" is often used when the ward clerk is given more responsibility.

The ward clerk handles the telephone, acts as receptionist, shows visitors where to go, and relieves the nurse of paper work involved in admission and identification of new patients, intra-departmental notification of transfers and changes of orders by doctor, laboratory, x-ray, or kitchen. She maintains medical charts, medication cards, and requisitions, and distributes records needed by physicians on their rounds.

Four institutions in Massachusetts report special training for ward clerks and unit coordinators. The Springfield Hospital Training Department has trained forty-five ward clerks since 1965 in its twenty-hour course. Rutland Heights Hospital trained six ward clerks in 1966 in a formal three-week course (six hours a day). The Veteran's Administration Hospital in Bedford trained twenty-two unit coordinators in recent years in an on-going, on-the-job program with two hours a month direct instruction throughout the first year, in addition to daily supervision. The Lowell Board of Public Welfare Work Experience and Training Program, in cooperation with the Beacon Press Chronic Hospital, set up a course with four hours of classroom training each week plus clinical experience over a six month period. One ward clerk was trained the first year, 1966, and later activity was not specified.

The admission requirements for the three parent hospitals is a high school diploma and clerk-stenographic training. At the Lowell Board of Public Welfare program, the applicant must be an AFDC welfare recipient. There is no tuition for any of the courses as they are in-service with a salary, or stipend in the case of the Lowell course. A certificate is awarded by Rutland and for the Lowell course. There is no professional or state certification for this training.

The curriculum is designed by professionals at the four hospitals. Only one of the hospitals reports the size of training staff: three full time persons, two with diploma or professional certification and one with a background of two years of college.

Institution offering the program	Funding/Stipend	Length of course	Eligibility
Lowell Bd. of Public Welfare, Work Exper. & Training Program, 100 Merrimack St., Lowell, 01852 Aff: Beacon Press Chronic Hosp.	Fed. OEO	6 mos. (22 wks.)	Welfare recipient AFDC
Rutland Heights Hospital Rutland, 01543	State	3 wks. (6 hrs.dy.)	H.S.grad + Clerical and typing
Springfield Hospital 759 Chestnut St., Springfield, 01107	Hospital Salary	20 hrs.	H.S. graduate
Veterans Administration Hospital 200 Springs Rd., Bedford, 01730	Federal	1 yr. (120 hrs.)	Clerk-steno.H.S. graduate min.

X-RAY TECHNICIAN

There are fifty-eight institutions training X-ray technicians throughout Massachusetts. Slightly less than half are in the Greater Boston area, twenty percent are in the northeast, and there are roughly ten percent each in the western, central, and southeast areas.

Hospitals act as the parent training institution and there is a cooperative arrangement between the hospital and an educational institution in forty-nine of the courses. Forty seven hospitals are associated with Northeastern University in Boston, one with Holyoke Community College, Holyoke, and one with Atlantic Union College in South Lancaster. Seven courses are conducted completely within the parent training hospital, and two others affiliate with nearby hospitals for part of the training.

Two hospitals reported starting courses in the 1930s: Mercy Hospital in Springfield and St. Lukes Hospital in Pittsfield. Lawrence General in Lawrence began the third program in 1942. Then, in 1943, Northeastern University offered to conduct the classroom part of the training during the first year and seven hospitals joined with them in the succeeding ten years, and more later. The 1950-60 decade showed the greatest increase of new courses (more than 20), and in the 1960s at least nine more opened up. Since twenty-three of the hospitals affiliating with Northeastern did not report their starting dates, further information may change this growth picture considerably.

A high school diploma is required for admission to X-ray technician training programs. Thirteen of the courses require in addition that the student have had mathematics and science in high school, and six courses require a high level of academic performance. All the X-ray technician courses run two years, except three, one at the Naval Hospital is for one year, and another two are three months longer or shorter than the two year standard.

The Northeastern University cooperating hospitals pay a tuition fee of $500 to the university for each student. Five of these hospitals charge the student $100 - $300 tuition. Among the other hospitals courses, four have no charge, four charge $200 tuition, one charges $375, and one charges $1030. Funds to cover tuition are available at many hospitals and some hospitals pay the entire fee. In many cases, during the second year when the student is at the hospital full time, he receives a stipend from the hospital. The amount ranges from $15 to $200 a month.

Only one institution trains specifically for its own hospital. Twenty-three courses train for the local or regional area. The others specify that they train for Massachusetts generally, for New England, or for the United States.

Thirty-seven of the X-ray courses included information concerning their instructing staff. These courses had 322 instructors, 138 were full time and 184 part time. The staffs are principally doctors and certified technicians (about an equal number of each). The size of the staffs varies, ranging from one to thirteen full time and from one to thirty-three part time instructors. Nine of the courses used full time instructors only and six courses used part time only; the rest were a combination. Full time only staffs ranged up to nine instructors, part time only staffs ranged up to ten, while the courses with a combination of both full time and part time had between three and thirty-four instructors.

Most of the curriculum is designed by the professional association, the American Society of Radiologic Technologists and adapted by the medical and educational institutions which teach the course. The courses prepare the student for the professional certification exam by the Registry Board.

The Northeastern University curriculum consists of courses in: orientation to radiology, anatomy and physiology, radiographic positioning, radiographic exposures, X-ray physics, darkroom chemistry and technique, nursing procedures, pediatric radiology, radiation therapy, intra-oral radiography, medical use of radioisotopes, medical and surgical diseases, operating procedure, equipment maintenance, department administration and new procedures. Additional courses listed by other institutions are: medical terminology, office procedures (legal considerations, records, etc.), protection to patients and personnel, topographic anatomy, civil defense, and technical writing.

Under the Northeastern cooperative arrangement, September through June of the first year is spent in rotation between the university and the hospital in six periods, each two weeks, of lecture and laboratory instruction, followed by four weeks of clinical. The remainder of the first year and the entire second year are spent in a hospital internship.

Institution Offering the Training	Funding/Stipend	Length of Course	Eligibility
ARLINGTON:			
#Symmes Hospital, Sumner St., 02174 (Aff:NEU)	-	-	-
BEVERLY:			
Beverly Hospital (Aff:NEU) Herrick & Heather Sts., 01915	Hosp. & Univ. Stipend & Tuit.	24 mos.	H.S. grad. 18 yrs.
BOSTON:			
#Beth Israel Hosp., 330 Brookline Ave., 02215 (Aff:NEU)	-	-	-
#Boston City Hosp., 818 Harrison Ave., 02118 (Aff:NEU)	-	-	-
Massachusetts General Hospital (Aff:NEU) Fruit St., 02114	Hosp. & Univ. Stip. & Tuit.	24 mos.	H.S. grad. 18 yrs.min. Physic; Upper $\frac{1}{4}$ class
Faulkner Hospital (Aff:NEU) 1153 Center St., Jamaica Plain	Hosp. & Univ. Stip. & Tuit.	24 mos.	H.S. grad. Sciences & math., Upper 1/3 class
New England Deaconess Hospital (Aff:NEU) 185 Pilgrim Rd., 02215	Hosp. & Univ. Stip. & Tuit.	24 mos.	H.S. grad. Acceptance by Northeastern
New England Med. Center Hosps. (Aff: NEU) 171 Harrison Ave., 02111	Hosp. & Univ. Stip. & Tuit.	24 mos.	H.S. graduate

Those hospitals marked (#) did not reply regarding X-ray training on the survey questionnaire, but are included from the listing of Northeastern University as hospitals cooperating with them in joint training. They are counted in the statistical table.

X-RAY TECHNICIAN cont.

Institution offering the program	Funding/Stipend	Length of course	Eligibility
BOSTON cont.			
Northeastern University Cent. for Cont.Educ. 360 Huntington Ave., Boston, 02115 (Aff. with 47 hospitals in Boston & nearby)	Tuition Hosp.Stip.	24 mos.	Must be accepted into an affiliated hospital x-ray training progr.
Peter Bent Brigham Hospital (Aff: NEU) 721 Huntington Ave., 02115	Hosp. & Univ. Stip. & Tuit.	24 mos.	H.S. grad. Under 35 Physics, algebra
St. Elizabeth's Hospital (Aff: NEU) 236 Cambridge St., Brighton, 02135	Hosp. & Univ. Stip. & Tuit.	24 mos.	H.S. graduate
University Hospital Schl.Radiologic Techn. (Aff: NEU) 750 Harrison Ave., Boston, 02118	Hosp. & Univ. -	24 mos.	H.S. graduate
Veterans Adm. Hospital (Aff: NEU) 150 S. Huntington Ave., Boston, 02130	Fed. VA & Univ. Stip. & Tuit.	24 mos.	H.S. grad. Good grades Physics,math. or biol.
BROCKTON:			
#Brockton Hospital (Aff: NEU) 680 Centre St., Brockton, 02402	-	-	-
CAMBRIDGE:			
#Cambridge City Hospital (Aff: NEU) 1493 Cambridge St., Cambridge, 02139	-	-	-
Mount Auburn Hospital (Aff: NEU) 330 Mount Auburn St., Cambridge, 02138	Hosp. & Univ.	24 mos.	H.S. graduate
CHELSEA:			
Naval Hospital 1 Broadway St., Chelsea, 02150	Federal	52 wks.	In service. Tests
CONCORD:			
#Emerson Hospital (Aff: NEU) Old Road, Concord, 01742	-	-	-
FALL RIVER:			
#Truesdale Hospital (Aff: NEU) 1820 Highland Ave., Fall River, 02720	-	-	-
#St. Anne's Hospital (Aff: NEU) 795 Middle St., Fall River, 02721	-	-	-
Union Hospital in Fall River (Aff: NEU) Highland Ave. at New Boston Rd., Fall River	Hosp. & Univ. Stip.&Tuit.	24 mos.	H.S. graduate
FITCHBURG:			
Burbank Hosp. Schl. of X-Ray Technology Nichols Rd., Fitchburg, 01420	Hospital Salary	24 mos.	17-22 yrs. H.S. grad.

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X-RAY TECHNICIAN cont.

Institution offering the program	Funding/Stipend	Length of course	Eligibility
FRAMINGHAM:			
#Framingham Union Hospital (Aff: NEU) 25 Evergreen St., Framingham, 01701	-	-	-
GLOUCESTER:			
Addison Gilbert Hospital (Aff: NEU) 298 Washington St., Gloucester, 01930	Hosp. & Univ. Stip. & Tuit.	24 mos.	H.S. graduate
HAVERHILL:			
#Hale Hospital (Aff: NEU) 40 Buttonwoods Ave., Haverhill, 01830	-	-	-
HOLYOKE:			
Providence Hospital (School of X-ray) 1233 Main St., Holyoke, 01040	Hosp. Stip. Tuition	24 mos.	H.S.grad. 18-30 yrs.
HYANNIS:			
#Cape Cod Hospital (Aff: NEU) 27 Park St., Hyannis, 02601	-	-	-
LAWRENCE:			
Lawrence Gen.Hosp.Dept. of Radiology 1 Garden St., Lawrence, 01842	Hosp. & Univ. Stip. & Tuit.	24 mos.	17-35 yrs. H.S.grad.
LOWELL:			
Lowell General Hospital (Aff: NEU) Varnum Ave., Lowell, 01854	Hosp. & Univ. Tuition	24 mos.	18 yrs.min. Upper 1/3 class
St. John's Hosp.Sch. of X-ray Techn.(Aff:NEU) 14 Bartlett St., Lowell, 01852 (Affiliate) Mass.Gen.Hosp.Dept. X-Ray Therapy	Hosp. & Univ. Tuit.	24 mos.	H.S.grad. College preparatory
St. Joseph's Hosp.Sch. of Radiol.Techn.(Aff:NEU) 220 Pawtucket St., Lowell, 01853 (Affiliate) Mass.Gen.Hosp.Div. Radium Therapy	Hosp. & Univ. Tuit.	24 mos.	18-30 yrs.H.S.grad tests.
LYNN:			
Lynn Hosp.Sch. of Radiologic Techn.(Aff:NEU) 212 Boston St., Lynn, 01904	Hosp. & Univ. Stip.&Tuit.	24 mos.	H.S. grad. Upper half class.Sciences, math
Union Hosp.Sch. of X-ray Technol. (Aff:NEU) 500 Lynnfield St., Lynn, 01904	Hosp. & Univ. Stip. & Tuit.	24 mos.	18 yrs. H.S.grad.Upper ½ class.Sciences,math
MALDEN:			
Malden Hospital (Aff: NEU) Hospital Rd., Malden, 02148	Hosp. & Univ. Stip.& Tuit.	24 mos.	17-30 yrs. Female H.S.grad. Refs.Test Sciences.Pref.Jr.Coll.

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X-RAY TECHNICIAN cont.

Institution offering the program	Funding/Stipend	Length of course	Eligibility
MARLBOROUGH:			
Marlborough Hosp.Sch.Radiol.Techn. (Aff:NEU) 57 Union St., Marlborough, 01752	Hosp. & Univ. - Tuit.	27 mos.	H.S.graduate
MEDFORD:			
Lawrence Memorial Hosp. of Medford (Aff:NEU) 170 Governors Ave., Medford, 02155 (Affiliate:Univ.Hospital, Boston, Therapy)	Hosp. & Univ. Stip. & Tuit.	24 mos.	17-35 yrs.Unmarried H.S.grad.Upper½ class
METHUEN:			
Bon Secours Hosp. Dept. of Radiology (Aff:NEU) 70 East St., Methuen, 01844	Hosp. & Univ.	24 mos.	18-30 yrs. H.S.grad. Sciences. Math.
NORTH ADAMS:			
North Adams Hospital Hospital Ave., North Adams, 01247	Hospital Stipend	24 mos.	H.S.grad.Sciences
NORTHAMPTON:			
Cooley Dickinson Hospital 30 Locust St., Northampton, 01060	Hospital -	24 mos.	-
NORWOOD:			
Norwood Hospital (Aff:NEU) 800 Washington St., Norwood, 02062	Hosp. & Univ. Stipend	24 mos.	H.S.grad.College preparatory
NEW BEDFORD:			
St. Luke's Hospital 101 Page St., New Bedford, 02740	Hosp. & Univ. Tuition	24 mos.	-
NEWTON LOWER FALLS:			
Newton-Wellesley Hospital (Aff:NEU) 2014 Washington St., Newton Lower Falls,02162 (Aff: Mass.Gen. Hospital , for radiation therapy)	Hosp. & Univ. Stip. & Tuit.	24 mos.	H.S. graduate
PITTSFIELD:			
Pittsfield General Hospital 725 North St., Pittsfield, 01201	Hosp. & Univ. Stip. & Tuit.	24 mos.	18-30 yrs. H.S.grad. college prep.
St. Luke's Hosp. Sch. of X-Ray Tech.(Aff:NEU) 379 East St., Pittsfield, 01202	Hosp. & Univ. Stip. & Tuit.	24 mos.	H.S.graduate
QUINCY:			
Quincy City Hosp.Sch.Radiol.Techn. (Aff:NEU) 114 Whitwell St., Quincy, 02169	Hosp. & Univ. Stip. & Tuit.	24 mos.	H.S.grad. Physics,math 17 yrs. H.S.grad.

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X-RAY TECHNICIAN cont.

Institution offering the program	Funding/Stipend	Length of course	Eligibility
SALEM:			
Salem Hosp.Sch. of Radiol.Techn. (Aff:NEU) 81 Highland Ave., Salem, 01970	Hosp. & Univ. Stip. & Tuit.	24 mos.	17 yrs. H.S.grad.
SAUGUS:			
Saugus General Hospital (Aff:NEU) 81 Chestnut St., East Saugus.	Hosp. & Univ. - Tuition	24 mos.	-
S.LANCASTER:			
Atlantic Union College South Lancaster, 01561 (Affiliate: New Eng.Mem.San. & Hosp. 5 Woodland Rd., Stoneham, 02180)	Coll. & Hosp. (1 yr.Coll.)	2 yrs.	H.S. graduate
S.WEYMOUTH:			
South Shore Hosp.Sch.X-Ray Techn.(Aff:NEU) 90 Columbian St., South Weymouth, 02190	Hosp. & Univ. Stip. & Tuit.	24 mos.	H.S.grad.college pref. Sciences. Good grades
SPRINGFIELD:			
Mercy Hospital Radiology Dept. 233 Carew St., Springfield.	Hospital Stip. & Tuit	24 mos.	H.S.grad.Upper ½ class Sciences. Typing
Wesson Mem.Hosp.Sch. Radiologic Techn. 140 High St., Springfield, 01105 (Aff: St. Vincent Hospital, 25 Winthrop St. Worcester, for angiocardiography)	Hospital Stip. No tuit.	24 mos.	H.S. graduate
STONEHAM:			
New Eng. Mem. Sanitarium & Hosp. (Aff:NEU) 5 Woodland Rd., Stoneham, 02180	Hosp. & Univ. Stip. & Tuit.	24 mos.	18 yrs. H.S.grad. Sciences
STOUGHTON:			
# Goddard Memorial Hospital 909 Sumner St. 02072	Hospital Stip. & Tuit.	24 mos.	H.S.graduate
TAUNTON:			
Morton Hospital (Aff:NEU) 88 Washington St., Taunton, 02780	Hosp. & Univ. Stip. & Tuit.	24 mos.	H.S.grad.Good grades Math, Physics
WALTHAM:			
Waltham Hospital (Aff:NEU) Hope Ave., Waltham, 02154	Hosp. & Univ. Stip. & Tuit.	24 mos.	H.S.graduate

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X-RAY TECHNICIAN cont.

Institution offering the program	Funding/Stipend	Length of course	Eligibility
WOBURN:			
Choate Mem. Hosp. Sch. Radiol. Tech.(Aff:NEU) 21 Warren Ave., Woburn, 01801 (Aff: Boston City Hosp. for radiation therapy; Mass. General Hosp. for special procedures)	Hosp. & Univ.	24 mos.	17-35 yrs. H.S.grad.
WORCESTER:			
Mem. Hosp. Sch. of Radiolog. Techn. (Aff:NEU) 119 Belmont St., Worcester, 01605	Hosp. & Univ. Stip. & Tuit.	24 mos.	H.S.grad, college prep.Sciences,Math
St. Vincent Hospital Sch. of X-Ray Techn. 25 Winthrop St., Worcester, 01604 (Affiliate: Mercy Hosp., 233 Carew St.,Springfield)	Hospital Stip. & Tuit.	24 mos.	18 yrs. H.S.grad. Sciences

\# included in statistical count, taken from Northeastern list.
* not included in statistical count
** not included in statistical count

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